

WHY IS TAXONOMY UTILITARIAN?

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ABSTRACT.—Cognitive and utilitarian explanations of taxonomy have often been opposed in ethnobiological studies. In this paper, data from Montagnais and Cree taxonomies show a relation between taxonomic structure and uses of plants and animals. This relation operates through partons (parts of the entities that are classified). Traditional societies are not the only ones to show such taxonomic features. Linnean taxonomy was also based on a very specific historical context in which there were direct relations between utility and taxonomic development. On the other hand, the relation between taxonomy and utilization through parts of the entities classified can further help us to understand taxonomic anomalies or why an entity can be classified in more than one category.

RESUMEN.—En los estudios etnobiológicos se contraponen a menudo las explicaciones cognitivas y utilitarias de la taxonomía. En este artículo, los datos provenientes de las taxonomías Montagnais y Cree muestran una relación entre la estructura taxonómica y los usos de plantas y animales. Esta relación opera a través de los partones (partes de las entidades que son clasificadas). Las sociedades tradicionales no son las únicas que muestran tales características taxonómicas. La taxonomía lineana estuvo basada también en un contexto histórico muy específico en el que había relaciones directas entre la utilidad y el desarrollo taxonómico. Por otro lado, la relación entre taxonomía y utilización, a través de las partes de las entidades clasificadas, puede ayudarnos a comprender mejor las anomalías taxonómicas, o por qué una entidad puede ser clasificada en más de una categoría.

RÉSUMÉ.—Les explications cognitives et utilitaires de la fonction taxonomique apparaissent souvent opposées dans les études ethnobiologiques. Dans cet article, des données provenant des Montagnais et des Cris démontrent qu'il existe une relation étroite entre la structure taxonomique et l'utilisation des plantes et des animaux. Cette relation opère à partir de partons (ou parties des entités qui sont classées). Les sociétés dites traditionnelles ne sont pas les seules à montrer un tel fonctionnement taxonomique. La taxonomie linnéenne tire également son origine d'un contexte historique spécifique où des relations entre l'utilisation et le développement taxonomique peuvent être mises en évidence. D'un autre côté, la relation entre la taxonomie, l'utilisation et la paronomie peut nous aider à mieux comprendre les anomalies taxonomiques ou pourquoi une entité peut être classée dans plus d'une catégorie à la fois.

INTRODUCTION

Cognitive and utilitarian explanations of taxonomy have often been opposed in ethnobiological studies. While the advocates of the first position believe that

the purpose of classification is purely intellectual, geared by a compulsion to put order in a chaotic world (Tyler 1969:6), or by simple curiosity (Berlin 1992:290), the defenders of the second argue that people classify entities most likely because they use them (Diamond 1966), and that classification as cultural knowledge is adaptative in essence (Hunn 1982:844). This debate in ethnobiology is but an episode of a much larger debate in anthropology between intellectualism and materialism. One is not surprised to see supporters of the cognitive interpretation in ethnobiology rely on Lévi-Strauss's statement about the intellectual need for human beings to classify without any practical purpose (Berlin 1992:8) and the supporters of the utilitarian approach evoke evolutionary theory (Hunn 1982:844), or even oppose Malinowski to Lévi-Strauss in their initial statement in an attempt to relativize the latter's position and show how pragmatics has been ignored in folk classification studies (Morris 1984:45).

On the other hand, certain authors—mostly advocates of the utilitarian approach—have tried to move ethnobiological studies out of the impasse created by these two drastic positions. New interpretations have been suggested. Posey (1984:123), for example, has proposed to distinguish between "*process* of classification and *purpose* for classification," relating the former to cognitive phenomena and the latter to a utilitarian or adaptationist approach. In the end, however, Posey argues for a utilitarian basis of taxonomy in the broadest sense (practical and symbolic), not resolving the issue of knowledge per se as an explanation for the existence of taxonomy. Hays (1982), Hunn (1982), and Morris (1984) have also proposed solutions. These solutions have some elements in common. They suggest that taxonomy be viewed in relation to numerous factors, such as "utilitarian, ecological, and cultural concerns" (Morris 1984:58), "biological discontinuities in nature, chance historical events, 'utilitarian' human concerns, human cultural concerns in a broader sense, intellectual curiosity, and constraints deriving from the nature of human perception and cognition" (Hays 1982:93), or that it might be better analysed through a study that would combine "cognitive, linguistic, ecological, and evolutionary theory to define a dynamic ethnoecology" (Hunn 1982:844). Two of these authors also share the belief that taxonomy is constituted of what Hunn (1982:830) calls a "natural taxonomic core" that serves a general purpose, "artificial peripheral taxa" serving a special purpose, and what Morris (1984:57) defines as prototypical taxa, around which the Chewa classification he studies focuses. The general and special purpose of Hunn are both utilitarian, since the first one is concerned with acting upon entities and the second one with "collectively represent[ing] a nonresource" (Hunn 1982:835) which is, in other words, a negative utility. As regards prototypicality, Randall (1976;1987; Randall and Hunn 1984) has elaborated original methods to determine the focal range of higher categories in the taxonomy and, in doing so, has insisted on a contextual approach in studying classification. Moreover, his approach has generated evidence that classification involves functional attributes besides only perceptual ones.

In this paper, the two approaches in classification studies, the intellectual and the utilitarian, will be taken into account, using certain concepts of Hunn (1982), Morris (1984), and Brown (1976), mainly, in an attempt to show in what ways taxonomy is utilitarian and in what ways it is not. With Montagnais and Cree data, I will show how taxonomy is based on prototypical¹ taxa and how periph-

eral taxa are related to these taxa, having been included in the taxonomy most likely over time. Prototypical taxa are the core of the taxonomy and include the main categories of the taxonomy. They are based on uses of the entities that are classified. Other taxa that are peripheral are defined negatively (as nonresource) and can even form categories of their own in the taxonomic structure. The *basis* of the taxonomy, through the core taxa, is utilitarian, but the final *purpose* of the classification is also intellectual, since peripheral taxa or categories respond to the need for human beings to include in their world view most of the entities with which they interact, whether directly through use, negatively through non-use, or out of simple curiosity. Furthermore, I will demonstrate how the relation between taxonomic structure and uses of plants and animals operates through partons. The term parton is borrowed from Brown (1976:401), although in the present article its definition involves slightly different attributes. A parton will still be considered as a part (botanical, anatomical) of an entity that is classified, but the inclusive aspect or hierarchical ("part of") relationship implied in Brown's usage of the word will not be taken into account. In the context of my study, a parton is meant strictly as a *useful part* of a plant or an animal since it appeared as such in the discourse and practices of my informants as well as through the analysis of the same discourse and practices. In fact, the activity of partons underlies classification and accounts for it. The same activity also helps us to understand anomalies or why an entity is classified in more than one category.

Traditional societies are not the only ones to show such taxonomic features. Linnean taxonomy was also based on a very specific historical context in which there were direct relations between utility and taxonomic development. Since Linnaeus, taxonomy has evolved to include all entities in such a manner that its utilitarian basis is now not so easily perceptible as it was at the time this worldwide taxonomy was created. The same evolution could probably apply to traditional societies.

The conclusion reached in this paper, which is based on the analysis of empirical data, appears as a new development in the area of the study of intellectual and utilitarian aspects of classification. It shows clearly how the relation between utilitarian factors and perceptual ones operates in the higher inclusive categories. Certainly, as Berlin (1992:181-190) has pointed out, these categories (i.e., life-forms) are striking perceptually and "*appear to be based on a small number of biological characters*" (emphasis added). But they have also evolved from (or originated from) uses of the parts of the entities classified in these categories. In fact, what Berlin denies (utilitarian prominence over a cognitive basis) and what Hunn and Randall consider on the same level (i.e., cognitive and utilitarian factors) are shown here to be aspects of the same process but on two separate levels, with the utilitarian factors in the end forming the basis for the actual operation of classification.

CONTEXT OF STUDY

The data come from three different studies conducted among the Montagnais and Cree peoples, two Native groups from the Eastern Subarctic. Montagnais and Cree are part of the Algonquian language family. A first study was conducted in

1981 in Mingan, on the north shore of the Gulf of St. Lawrence in Quebec, Canada. During the summer, 269 specimens of plants were collected by the Montagnais and myself and deposited at the Department of Botany at Laval University in Quebec for identification. For every specimen, different questions were asked during collection or on the same day to four different informants (two men and two women) between 65 and 74 years of age. The questions were asked in Montagnais and translated through an interpreter, and included such aspects as the name of the plant, its etymology, its gender (animate or inanimate²), its classification, the semantic features of the categories, the plant's utilization, and its relation to animals. Identification of the specimens by professional Western botanists yielded 200 species: 165 vascular plants of 600 estimated by botanists in the area, 16 mosses and hepaticae of an estimated 150, 15 lichens out of 100, 3 mushrooms out of 1,000 and 1 alga out of 100. Attention in collecting was given mostly to the plants that my informants as well as other members of the community named and used, that is, the plants were selected for study mostly by the Montagnais themselves, in an attempt to cover and represent the major areas (bush, marsh, muskeg, mountain, coast, and so on) traditionally occupied by these people. This explains why the biggest proportion consists of vascular plants, reflecting the latter's importance in a society traditionally oriented towards hunting and fishing more than gathering. The sample is deemed satisfactory: from 1981 to today, no other new plant has been named or is said to be used by the members of this community, although research is still being conducted on the relations between these people and their environment. The study revealed 137 ethnobotanical lexemes organized in 119 terminal taxa and 18 higher categories that will be discussed below³.

A second study was conducted between 1982 and 1988, also among the Montagnais people. In 1982–1983, information on 172 animal species was collected from eight Montagnais elders (between 59 and 78 years old) from two communities, Mingan and Natashquan. These animals had been selected by my interpreters as the less ambiguous ones from Bouchard's (1973) study of Montagnais zoological taxonomy. That taxonomy is comprised of 229 terms, of which the many synonyms, sex and age variations, unidentified taxa, and other variations were disregarded. Starting with Montagnais zoological nomenclature, questions were asked on different aspects of the knowledge of these animals, including anatomy, behavior (sounds, senses, and locomotion), ecology (habitat and food, relations between animals, and seasonal phenomena), reproduction, and traditional identification, nomenclature, and taxonomy. In 1988, a complementary study of the identification, nomenclature, and classification aspects was done in an attempt to grasp the whole system. Illustrations for 567 taxa—mostly in color—were presented to two of the eight elders approached in 1982–1983. These illustrations covered the majority of species present in the area traditionally occupied by the Montagnais (for a discussion of these taxa and all the sources used to identify them, see Clément 1995, chapter 7). For each illustration, several questions on nomenclature, synonymy, reproductive habits, and classification were asked. The study yielded 227 lexemes (excluding synonyms and other lexemes referring to distinctions based on age, sex, and so on). Out of these, 212 referred to terminal taxa and 15 to larger categories⁴.

Finally, the Cree data was gathered in 1990. The study⁵ was done in Chisasibi,

on the east coast of James Bay in Quebec. It focused on fish species and ichthyological knowledge, but I also gathered information on the complete ethnozoological taxonomy. Three main informants (56, 57, and 66 years old) and their family participated in the study, which yielded data on Cree fish nomenclature, taxonomy, anatomical knowledge, ecology (habitat, food, migrations), reproduction, fish diseases, and utilizations. The study was conducted both with color illustrations of species and real specimens. I first established a list of fish in Cree territory utilizing Scott and Crossman (1973) and Morin and Dodson (1986).

MONTAGNAIS BOTANICAL TAXONOMY

Botanical partonomy.—The Montagnais people believe in an order in the creation of their universe. Informants usually agree that earth came first, the animals second, and human beings third. This corresponds to three native categories: *ashtshî*⁶ (earth), *aueshîshat* (animals), and *innu* (human being). When questioned further, the Montagnais place the bulk of the botanical entities known to them right after the category *earth*, even though some of the plants, like mosses and lichens, are labelled *ashtshî* (earth). The category between *earth* and *animals* is unlabelled but generally referred to as *ashtshî nte kânîtâutshîht* or *kânî-tâutshîki*, literally "in the earth, the ones that grow." This category forms a continuum attested by the categorization of "algae" (*shâshâpina*), which are situated right next to the category *animals* since they "live like animals but they always stay at the same place."

According to my informants, the key element to distinguish plants that are said "to grow in the earth" and plants that are considered as "earth" from the *animals* and the *human being* is the fact that the elements comprised in the first two categories cannot move by themselves. Further on, the main element that distinguishes one plant category (those plants "that grow in the earth") from the other (those that form the "earth" itself) is *ushkâtiâpî* (root).

Only the former are said to possess such an organ. Roots are also believed to be the main mode of reproduction for these entities, which is the case for certain important plants in the environment. In fact, in some places, propagation by means of layers is the only means of reproduction for trees such as black spruce (Hosie 1975:72). *Ushkâtiâpî* means etymologically "the filiform leg." There are other botanical partons that denote this anthropomorphic view of plants, such as *uâukanâkanâtuk*, the "backbone of the wood," which is the heart of the tree; *pitshu-atshuk*, balsam fir gum, which comes from *atshuk* (sperm or snot); and *mînapâkuna*, the "hairy covering," which covers several kinds of old-man's beard. For each of these partons, there is a story related to its human nature: for example, the "heart of the tree" is said to be called upon by the shaman to obey him (Speck 1977:200); the "gum" is believed to have originated from human testes thrown in a balsam fir (Savard 1979:35); and the old-man's beard is said to come from the hair of the father and mother of a young hero called Tshakâpesh (Lefebvre 1974).

Montagnais botanical knowledge comprises many other partons. Some are general like *mishtuk* (wood), *mîn* (fruit), *nîpîsh* (leaf), *uâpukun* (flower), and *uânâtsheshk* (bark); others are very specific such as *tshishtâpâkuanat* (branches

TABLE 1.—Principal Montagnais partons.

Partons	Definitions
<i>mîn</i> (fruit)	a part originating from a plant as the "product of the flower" according to one informant, as "growing on leaves" according to another; in general, the terms corresponds to what is known in Western botany as the reproductive body of a seed plant
<i>mishtuk^u</i> (wood)	internal part originating from <i>trees, shrubs, and small shrubs</i> ; in Montagnais, there is no common word for trunk and <i>mishtuk^u</i> is used for wood, trunk, and as a category for trees
<i>nîpîsh</i> (leaf)	a part that comes from a plant and grows on a stem; according to one informant, the word can be used to designate a sepal of a flower; no word for needles of conifers was recorded; some plants are said to be <i>nîpîsh</i> only due to their lack of a prominent stem
<i>uânâtsheshk^u</i> (bark)	general term for the part originating from a stem and a root and which constitutes its cover; two layers are distinguished, the outer and the inner; in one case (white birch), the outer layer (<i>uâshkuai</i>) is named differently from the inner layer (<i>uânâtsheshk^u</i>)
<i>uâpukun</i> (flower)	group of floral leaves originating from a plant; some plants are said to be <i>uâpukun</i> because of the prominence of this part
<i>ushkâtiâpî</i> (root)	in general, an underground part originating from a plant; the word means also other parts which are considered in Western botany to belong to the stem (i.e. crown of plants; stem base of trees); the word is used for a category of plants marked by the prominence of this part; specific terms (e.g. <i>uatapî</i> , conifer root) are also used

of conifers), *ûtîkuana* (branches of deciduous trees), and *atamusat* (willow catkin); and most of these partons play a role in the development of the taxonomy.

Table 1 gives the Montagnais features associated with the principal partons noted above. Montagnais informants consider the relation between these different botanical parts and the plants as one of origin (*utshipanu*, "it comes from"). Brown (1976:422, note 7) does not mention this possibility while discussing the kinds of "part of" relationship explicit in different languages: he reports only "part of" or possessive ("x belongs to y") relations. When viewed through Montagnais eyes, all botanical parts that could have caused logical difficulties in their interpretation (e.g., can wood be considered a part of a tree in the same sense as a leaf is?) disappear. All "parts" *originate from* (i.e., they are not seen as part of or possessed by a plant) a plant, be they wood, berries, roots, or flowers. Moreover, as I will demonstrate below, this relation also implies the fact that these parts originate from plants as useful or useless products and is thus functional in essence.

Botanical taxonomy.—As noted above, plants are classified either in the category *ashtshî nte kânîtâutshîht*, or *kânîtâutshîki*, literally "in the earth, the ones that grow" or in the category *ashtshî* (earth). The first category includes *mishtukuat* (trees), *shakâua* (shrubs), *atishîa* (small shrubs), *mashkushua* (herbaceous plants),

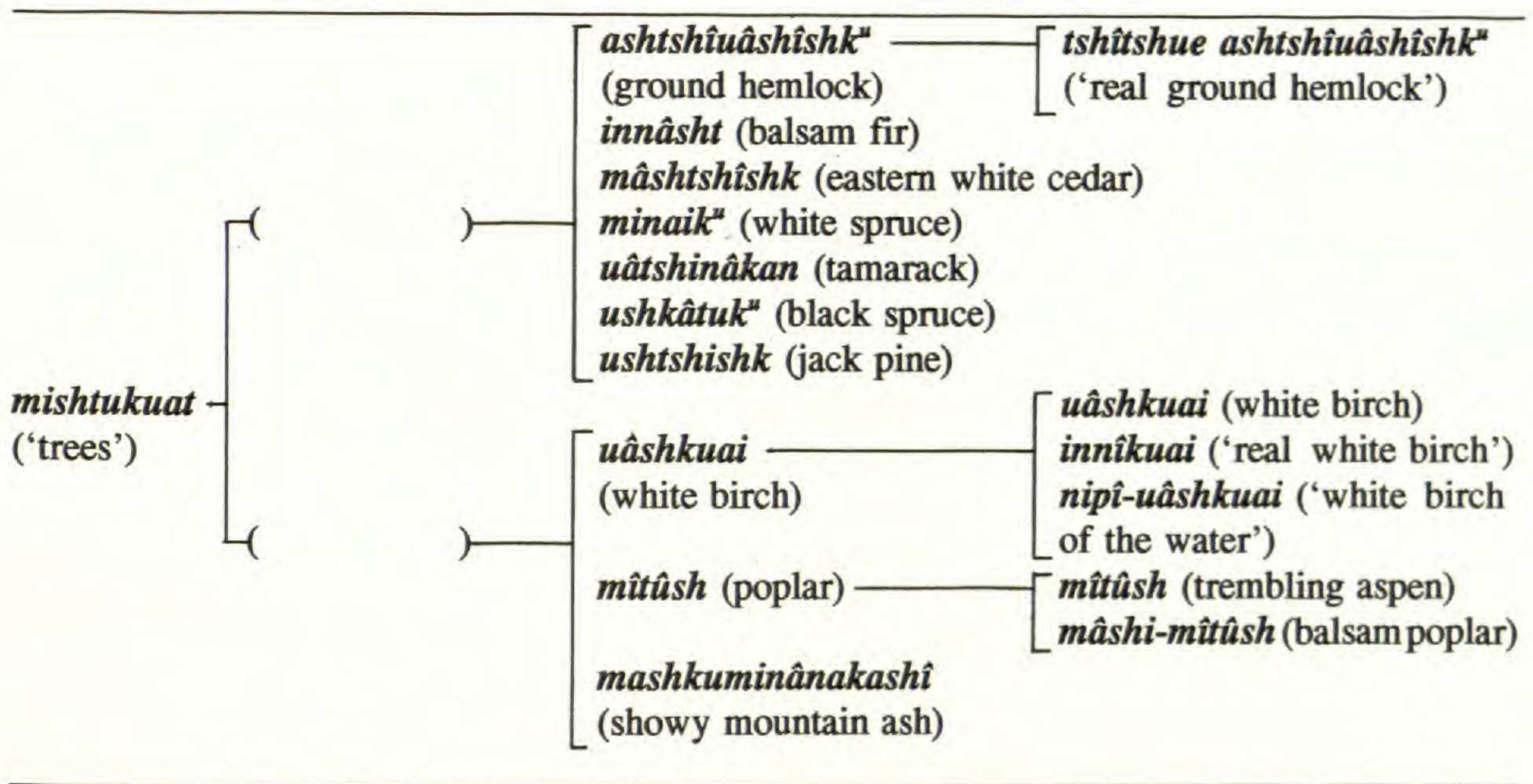


FIG. 1.—*Mishtukuat*, 'trees'.

and a few unaffiliated taxa. *Ashtshî* (earth) comprises mosses, lichens, and even types of mud, a fact that argues in favor of a continuum in this category also.

In Montagnais, *mishtuk*^u has two meanings: "wood" when used with inanimate gender, and "tree" when animate. Taxa belonging to the category *tree* are said (a) to possess a trunk, (b) to have a large diameter, and (c) to grow relatively high. Trees (Fig. 1) are first classified as evergreens and deciduous. These two categories are usually covert, though some informants name the second *uashkuai*, which is the prototype of this category (white birch). The reality of these covert categories is further attested by specific nomenclature for branches of conifers and deciduous trees (see above), as well as a name (*cikopi*) for evergreens in Atikamekw, a closely related Algonquian language. Only one taxon (ground hemlock) classified in the category *trees* by my four informants, two men and two women⁷, does not correspond to either the botanical⁸ or Montagnais definition of a tree: in fact, ground hemlock is a shrub, and as such has many stems. Informants say that "real ground hemlock" (*tshitshue ashtshiuashishk*^u) grows with balsam fir; they also name the branches of the plant the same way they name the branches of all conifers. Ground hemlock hence seems to have become a tree more by association with other trees (e.g., through having the same kind of branches) than by virtue of its own features, since contrary to the Montagnais definition of a tree, ground hemlock has many stems, the diameter of each stem is small, and it is not tall. Only one taxon appearing in Fig. 1 was classified differently by women and men: *mashkuminanakashih*, showy mountain ash, which was classified by the former as a tree because of its great height but by the latter as a shrub (see Fig. 2). The case is similar to that of *uâpineu-mîtshima*, willow, which is generally classified as a shrub but sometimes, with hesitation, said to also be a tree because it can grow very high. These two taxa are denoted in Montagnais by inanimate lexemes. In Montagnais, all the other trees, including the ground hemlock, are denoted by animate lexemes. At first glance, the reasons why these two taxa, showy mountain ash—which is a tree botanically—and willow—which can be a tree botani-

<i>shakâua</i> ('shrubs')	<i>apueminânakashî</i> (pin cherry) <i>atîkupemuk^a</i> (glandular birch) <i>atûminânakashî</i> (Bartram's shadbush) <i>atûshpî</i> (speckled alder) <i>innîtshîminânakashî</i> (fetid currant) <i>kâmatshakâshî</i> <i>shakâu</i> (wild holly) <i>mashkuminânakashî</i> (showy mountain ash) <i>mîkuâpemuk^a</i> (red-osier dogwood) <i>mishtukusha</i> (red-berried elder) <i>mûshuminânakashî</i> (edible cranberry-tree) <i>tshîtshue</i> <i>shakâu</i> (green alder) <i>uâpineu-mîtshima</i> (willow)
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FIG. 2.—*Shakâua*, 'shrubs'.

cally depending on the species—are classified in more than one category are not too clear. It seems as if informants were hesitating between different features (height of the plant, animate gender, one or multiple stems) to classify them. The real reasons for this multiple classification will appear as my analysis develops.

Most of the taxa included in the category *shakâua* (Fig. 2) are botanically shrubs, that is, multiple-stemmed and woody plants. There are four exceptions to this rule: willow, which can be a tree but is classified with the shrubs because of similar height; showy mountain ash, which is a tree but is considered sometimes as a *shakâu*; and speckled alder and pin cherry, which are small trees but considered as *shakâua* because they are too high to be in the next category, *atishîa* (small shrubs). For three of the last four cases, relative height appears to be a fundamental feature of differentiation. Besides this trait, informants also characterized *shakâua* as having (a) large stems, (b) larger leaves than *atishîa*, and (c) a double bark (one inside and one outside). In fact, to understand the apparent process of classification, one must view all the main categories as a continuum mostly defined by features of the stem (height and diameter) and the leaves (width). On the other hand, women and men only classified one other plant in this category besides showy mountain ash and willow differently: *innîtshîminânakashî*, fetid currant, which was a *shakâu* for the former and an *atishî* for the latter. Again, the reason given by the women was that the plant is "high."

Fifteen of the 21 terminal taxa considered as *atishîa* (Fig. 3) are botanically small shrubs, that is, small woody plants with several stems. The six others have woody stumps (raspberry, cloudberry), a woody part as the base (bunch-berry), strong rhizomes (beach pea, strawberry), which informants possibly associate with wood, or dense trunks (club-moss), perhaps also associated with wood, and therefore related to the *atishî*. Three taxa out of these six ambiguous ones have been classified differently by women and men: bunch-berry, a herbaceous plant classified as *atishî* by the women and *mashkushu* (herbaceous plant) by the men; strawberry, another herbaceous plant considered similarly (*atishî* by women and *mashkushu* by men); and club-moss, primitive vascular plants categorized as *atishî* by men but as kinds of *ushkâtiâpî* (root) by women (Fig. 5). Other general features of the category *atishîa* include (a) relative height (approximately 60 cm), (b) regular diameter of the stem, and (c) presence of small fruits (a feature

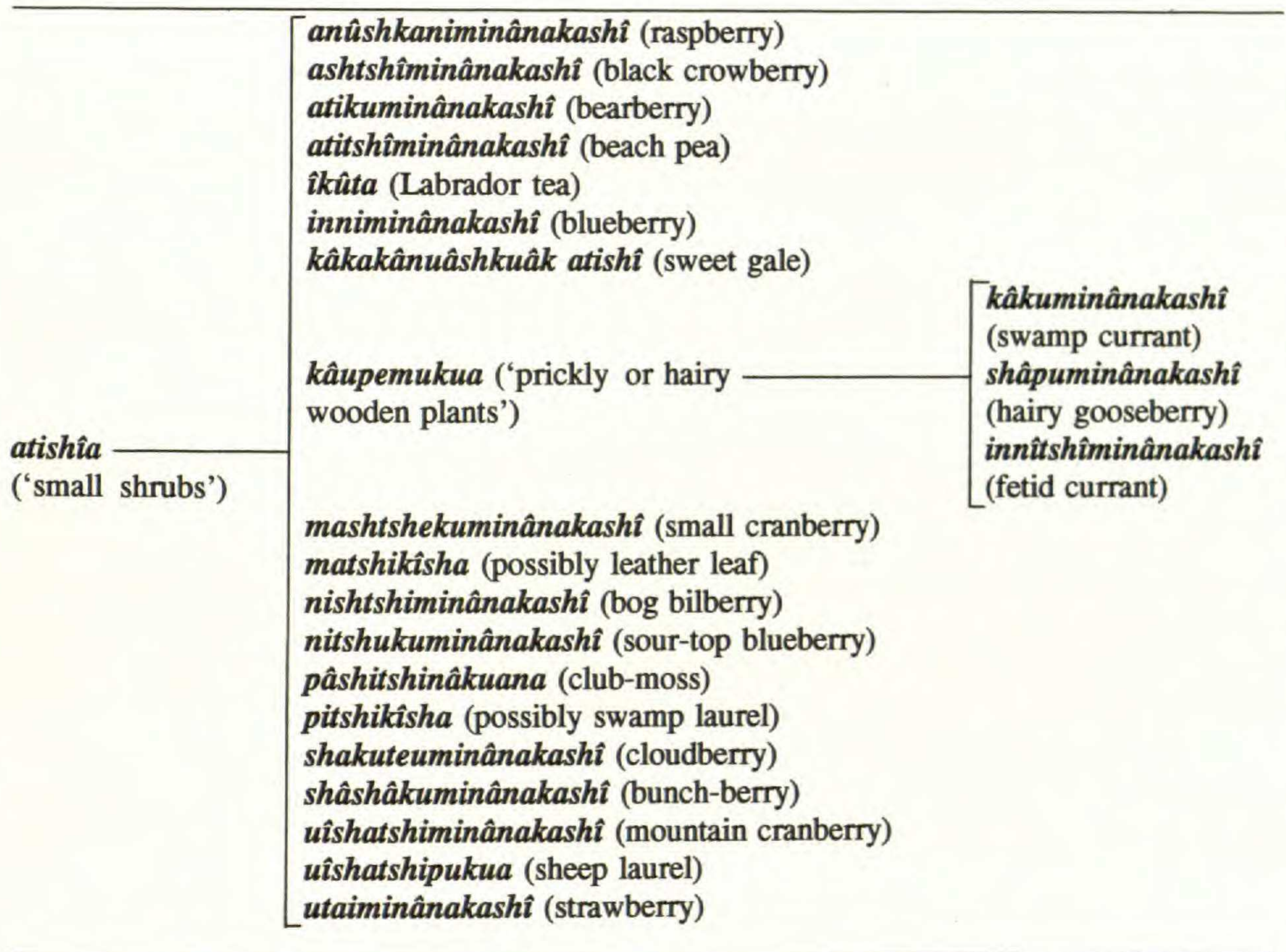


FIG. 3.—*Atishîa*, 'small shrubs'.

deduced from the fact that this category alone comprises 15 taxa out of 23 denoted by lexemes that are formed by a morpheme referring to small fruits). Finally, other taxa in the category are also classified differently by women and men: small cranberry, a tiny shrub, which is *atishî* for women but *mashkushu* (herbaceous plant) for men, probably because of its small height; mountain cranberry, considered by men only as a *mînakashîâshk^u* (fruit plant) without any affiliation to the main categories; and *innîtshîminânakashî*, fetid currant, discussed above, which is considered a *shakâu* (shrub) by women but, because of a special feature, as a *kâupemuk^u* (prickly or hairy wooden plant) and *atishî* (small shrub) by men.

Montagnais classification of *mashkushua*, herbaceous plants, is the most complex of their botanical taxonomy. Botanically, these plants are characterized by soft stems (absence of woody tissue) or even absence of stem. In the latter case, another part of the plant develops so much (for example, the leaves) that it becomes the main feature of the categorization (for example, the plant becomes a *nîpîsh*, literally "leaf"). Fig. 4 presents all the plants classified in one of the three main categories of nonwoody plants: *mashkushua*, herbaceous plants, which are characterized by (1) their relative height (they can be as high as an *atishî*), (2) their softness (not hard like wood), (3) their long leaves, and (4) their color, green; *nîpîsha*, leaves, characterized mainly by their leaves; and *uâpukuna*, flowers, which have big flowers compared with other plants. Certain plants in Fig. 4 were classified differently by men and women. Three cases have already been mentioned (*mashtshekuminânakashî*, small cranberry, *utaiminânakashî*, strawberry,

and *shâshâkuminânakashî*, bunch-berry). Besides these, there is also *pineuminânakashî*, snowberry, which is a kind of leaf for the women but without any category for the men; and *ûshpuâkanîssat*, sporophytes of mosses, which were classified by the women as a kind of earth instead of a kind of herbaceous plant as they were by the men. While the first of these cases is difficult to interpret, the second shows how classification operates through partons and subjective reasoning: *ûshpuâkanîssat* look like soft stems and can thus be classified as herbaceous plants; on the other hand, they are part of mosses, which from the Montagnais point of view are kinds of earth. A last comment can be made on Fig. 4. The complexity of the classification of these plants can best be evaluated when one looks at the many categories in which a particular plant can be placed. This again has to do with the part of the plant looked at when it is classified. For example, my informants classified a plant named *uîshakâtshâkuat*, fern, as a *mashkushu* (herbaceous plant) while its fronds were not completely developed; later in the season, a fully developed specimen of the same species was classified as a *nîpîsh* (leaf). The complexity of this type of categorization is shown in Fig. 4 by the multiple use of categories at different levels of the taxonomy.

The Montagnais botanical category *ashtshît nte kânîtaûtshîht* or *kânî-tâutshîki* (in the earth, the ones that grow) also includes ambiguous taxa. According to Berlin (1976:387), these taxa can be defined as those:

[. . .] which encompass a group of organisms, most of which are highly polymorphic usually in stem habit. In some contexts of identification, a specimen which is said to be a member of a particular generic may be classified as a member of one life form; in others, a different specimen of the same generic class may be regarded as a member of another life form, or placed in no life form at all.

Tshishtâpâkuanat (branches of conifers) and *ushkâtiâpîa* (roots) are examples of such taxa. They include plants that can be classified in one of the main categories discussed above (for example, *ashtshîuâshîshk^u*, ground hemlock, which is a kind of *mishtuk^u*, tree) and at the same time are said to be part of these categories which include plants not classified elsewhere (for example, *ashtshîuâshîshk^u* is also part of the category *tshishtâpâkuanat*, branches of conifers, which includes other unaffiliated taxa such as *kâkâtshiminânakashî*, common juniper). Fig. 5 illustrates this classification. Here again there are differences between women's and men's classifications. For example, *pâshitshinâkuana* is an *atishî* for the men because of its woody part and a kind of root for the women because of its crawling stems. Fig. 5 also includes unaffiliated taxa classified as such only by the women (*pineuminânakashî*, classified by men as leaves) or known only to women (*anîtshikâta*).

Besides the general category *plants that grow in the earth*, the Montagnais have another category, *ashtshî* (earth), in which are classified plants such as lichens and mosses, as well as kinds of mud and rotten wood. One of the main characteristics of these taxa is that they do not grow into the earth, but are the earth themselves, which grows. While this applies to mosses and lichens, it is not the case for kinds of mud or kinds of rotten wood, which informants seem to include in this category because earth is also constituted of elements that do not necessarily grow. In fact, this entire geovegetal category can be seen as a continuum of

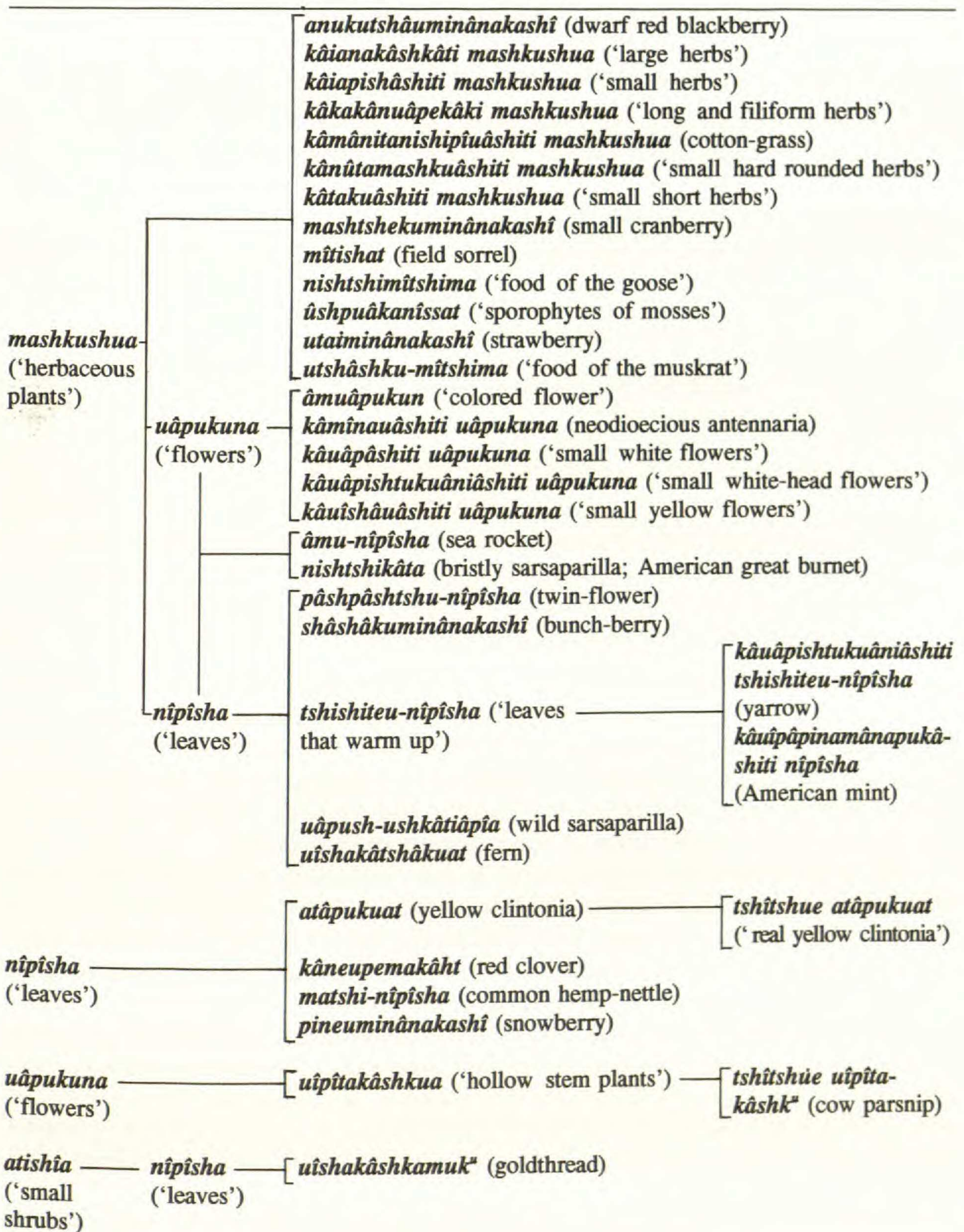


FIG. 4.—*Mashkushua*, 'herbaceous plants'.

entities that is denoted in the lexemes of the taxa themselves. From those lexemes composed of *ashtshî* (earth), such as *ashâstshu* (mud), to those formed with *-shkamuk^u* (ground, surface) as in the names for mosses and lichens, to rotten wood again marked by morphemes such as *ashtshî*, one can see a stratified vision of the earth's crust. This was also pointed out by two of my informants:

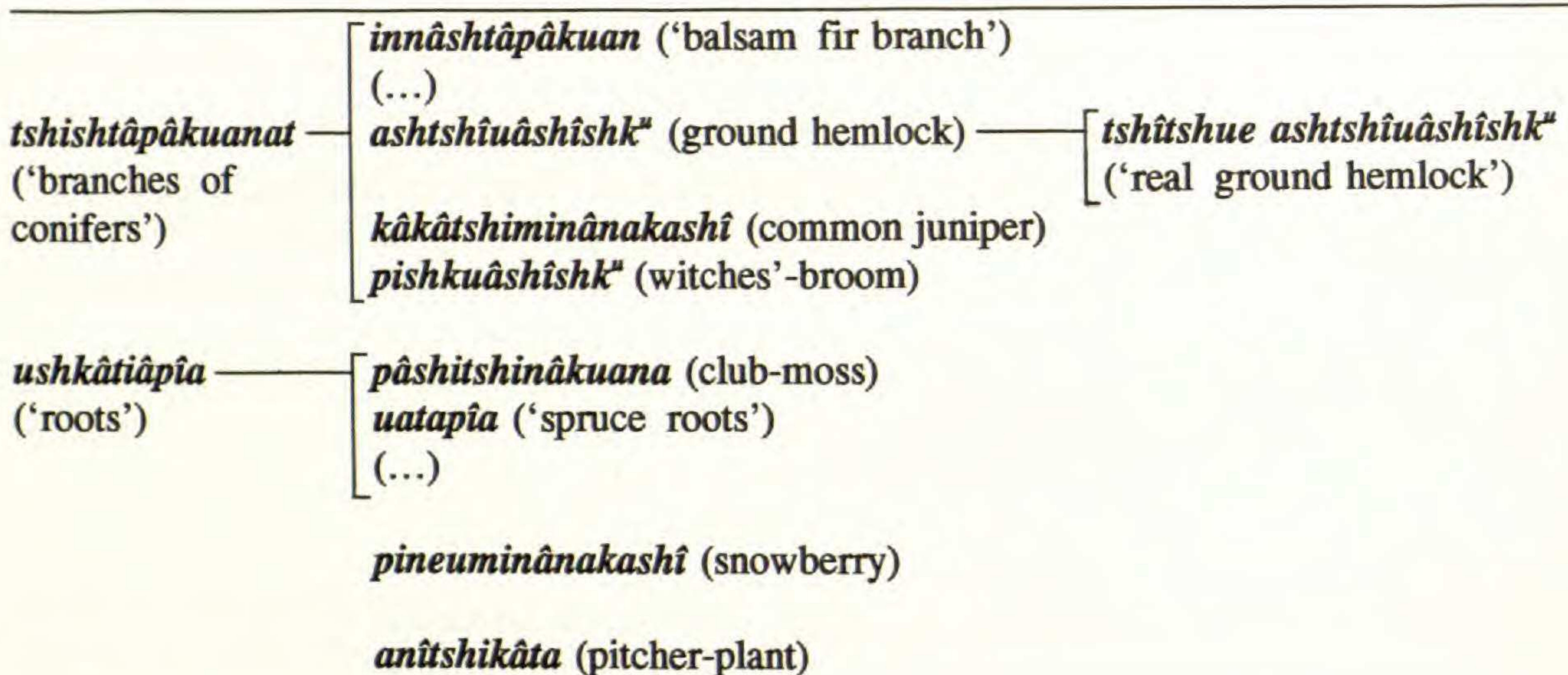


FIG. 5.—Ambiguous and unaffiliated taxa (abridged).

At the beginning, there is always sand. After the earth grows on it. After, it's *uâpitsheuâshkamuk^u* (reindeer moss). That's the last one, there is nothing after. *Nîtautshin ashtshî*, the earth grows. (Barthélemie Lafontaine and Michel Astamajo, Mingan, 18.06.1981)

According to the Montagnais, sand and stone do not belong to the category *ashtshî* (earth). While it is not my purpose to describe this entire domain, it can still be said that botanical entities classified as such can be considered as prototypical as the other elements inasmuch as we recognize that the morpheme (*-shkamuk^u* 'ground, surface') composing *all* the lexemes of these taxa (mosses and lichens) refers to the name of the category itself (*ashtshî*).

Fig. 6 illustrates the classification of taxa included in *ashtshî*. The figure includes only one taxon (*ûshpuâkanîssat*) that my two groups of informants classified differently. This was dealt with in the preceding section. Finally, Montagnais botanical taxonomy comprises a few taxa that could be affiliated with the category *ashtshî* inasmuch as these taxa do not have any roots, which is a feature of all the taxa classified as earth. Fig. 7 shows these taxa, about which I recorded no divergence on classification by women and men. The figure illustrates the importance of partons as means of classification (for example, rhizomes, cones, and tumor), a feature that is consistent with the use of other parts such as leaves, flowers, and roots, as classifiers of taxa in other sections of the taxonomy.

Use of plants.—The Montagnais use plants mostly for technical, medical, and nutritional purposes. There are a few ritual uses of plants, but considering their limited importance (only five species), these uses will not be taken into account in the following analysis.

Use of plants for technical purposes includes construction of objects such as canoes, snowshoes, sleds, permanent or temporary shelters, instruments such as rattles and drums, utensils, games, and many articles traditionally used on a daily basis in the bush, such as dyes, diapers, and an equivalent of toilet paper. All of these elements are generally made out of either *mishtukuat* (trees) or *ashtshî* (earth), and it is with the help of these two notions that I will present the

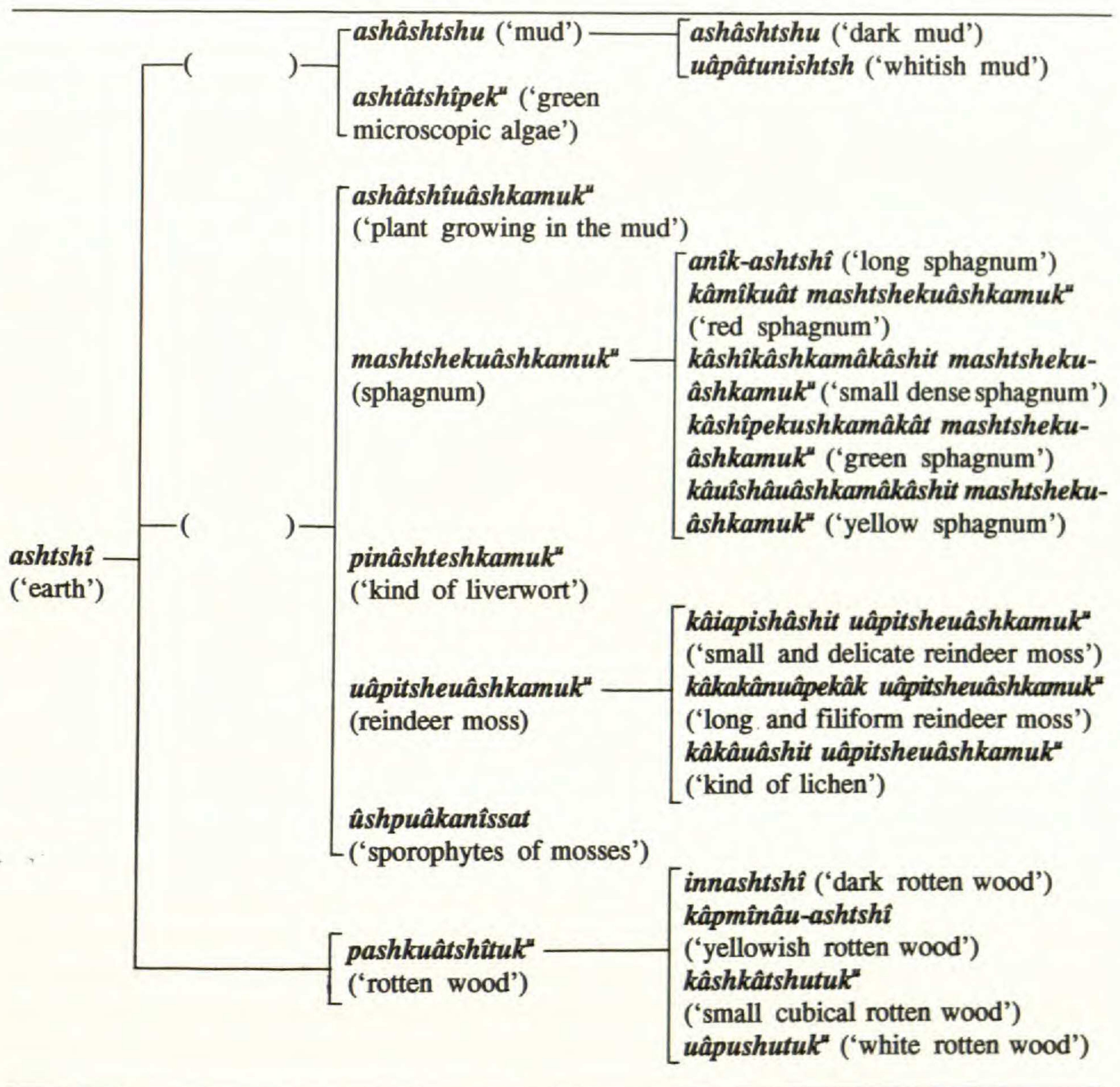


FIG. 6.—*Ashtshî*, 'earth'.

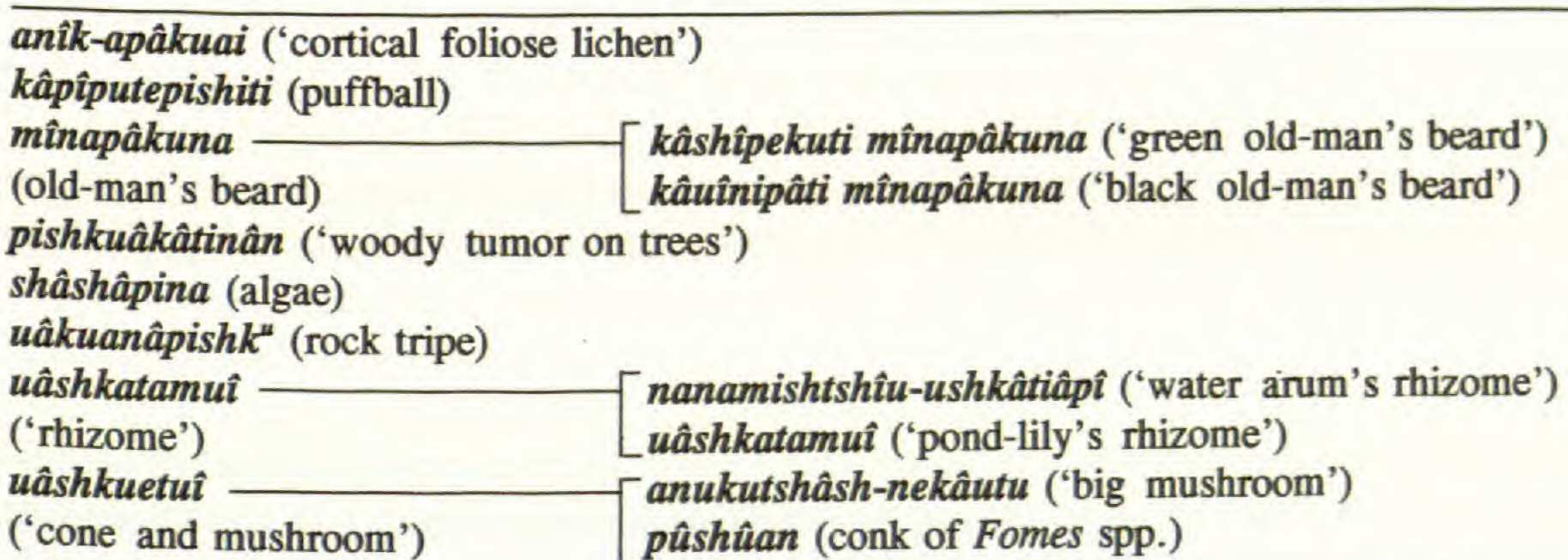


FIG. 7.—Unaffiliated and ambiguous taxa related to *ashtshî* (abridged).

technical uses of plants. In Montagnais, the word *mishtuk^u* has two meanings, as noted earlier: when animate it signifies a "tree," but when inanimate it refers to a part of the tree, the "wood." The free form of the notion wood is *mishtuk^u*, as in *mishtuku-emîkuan*, "wooden spoon." The bound forms are more numerous, and it is through their analysis that one can discover the links between taxonomy (*mishtukuat*, trees) and paronymy, or uses through a paronym (*mishtuk^u*, wood). The main bound form for wood is *-âshk^u*. This morpheme is generally found in those words that refer to most of the objects (or parts of objects) constructed with ligneous species, mainly from wood (*mishtuk^u*, inanimate) and therefore from trees (*mishtuk^u*, animate). A partial list of these objects would include toboggans (*utâpânâshk^u*) made out of tamarack, white spruce, white birch, and black spruce; one kind of sled (*utatshinâkanâshk^u*) made out of the same species; bows (*akâshk^u*), which were traditionally made out of black spruce or tamarack; frames of snowshoes (*ashâmâshk^u*) made out of white birch, tamarack, and black spruce; salmon spears (*anituiâshk^u*) fabricated mainly with black spruce, white spruce, or balsam fir; axe handles (*ushtâshkuâshk^u*) made mainly with showy mountain ash; and tent stakes (*tshîtâshkâtshikana*), which can be made out of black spruce, white spruce, white birch, trembling aspen, speckled alder, green alder, or even dry balsam fir. Other bound forms for wood are *-îshk^u*, which also has the meaning of branch, *-pemuk^u*, which refers also to the leafy nature of woody plants, and *-tuk^u*, which also conveys the notion of dry or useful. Except for *-tuk^u*, these bound forms are not used as frequently as *-âshk^u* in lexemes denoting objects made out of ligneous material. Nevertheless, the notion of wood establishes a link between taxonomy and uses of plants. It is also a notion that defines many categories in the taxonomy: wood is a key element to differentiate *mishtukuat* (trees), *shakâua* (shrubs) and *atishîa* (small shrubs) from *mashkushua* (herbaceous plants); and it is finally a notion that appears in two subdivisions of the taxonomy (*kâupemukua*, "hairy wooden plants," and *uîpîtakâshkua*, "hollow stem plants") and in a nontaxonomic category used to group fruit plants (*mînakashîâshkua*). Woody plants other than *mishtukuat* (trees) are used by the Montagnais for technical purposes, but these are very few in number: only two *shakâua*, "shrubs," as pelt dryers; branches of two other *shakâua*, as a means to whip the dew off trees while walking in the bush; one *atishî*, "small shrub," for tanning hides; and one *mashkushu*, "herbaceous plant," to construct an animal call. In the last case, the plant is the only one among herbaceous plants to be named by a word formed of a morpheme referring to wood (*uîpîtakâshk^u*). This is consistent with the relation between technical purposes and the woody nature of the plants used, even if this plant constitutes an anomaly (it is classified with herbaceous plants that are normally nonwoody plants).

The only other plants that are used technically as much as *mishtukuat* (trees) are those included in the main category *ashtshî* (earth). One of the divisions of *ashtshî* is even named with a morpheme referring to wood (*-tuk^u*, dry wood, useful wood), linking the main category *ashtshî* to *mishtukuat*, from which comes *mishtuk^u* (wood). *Mishtuk^u* dries up to give different kinds of dry wood (for example, *innâshtshituk^u*, dry balsam fir, and *uâshkuaituk^u*, dry white birch) or rotten wood (*pashkuâtshîtuk^u*), as recorded in Fig. 6. The latter category, *rotten wood*, comprises elements mostly used as diapers or to smoke hides. As was the

case for *mishtuk*^u, *ashtshî* appears in both free and bound forms. The main bound form is *-shkamuk*^u, "ground, surface," which appears in many words referring to plants (for example, all the *mashtshekuâshkamuk*^u, sphagnum) used as diapers, toilet paper, and filling material in log cabins.

Medical use of plants operates in a similar manner as that described for technical use. The main notion of wood, governing the development of one general category of plants (*mishtukuat*, trees) used for technical purposes, is echoed here by many notions (for example, bark and leaves) linked to either nomenclature or taxonomy of medicinal plants. Description of these parts of plants and their uses will first reveal the most apparent relations between uses and classification.

The bark (*uânâtsheshk*^u) of 14 species is used as medication. All these species are ligneous, hence classified as *mishtukuat* (trees), *shakâua* (shrubs), and *atishîa* (small shrubs). Moreover, in most cases, it is the "internal" bark (phloem) that serves to prepare the medication. Branches of 11 species are also used. In Montagnais, *branch* can take many forms: a free form for *branch of conifer* (*tshishtâpâkuan*, which is the name of a category; see Fig. 5); a free form for *branch of deciduous tree* (*ûtîkuan*); and a bound form, *-îshk*^u, which concerns both evergreen and deciduous trees and which is found in lexemes denoting plants specifically used as medication (for example, *tshîtshue ashtshîuâshîshk*^u, "real ground hemlock"). Medicinal branches come from the same categories as medicinal barks, that is, trees and shrubs. The leaves (*nîpîsha*) of ten species are also prepared for medical purposes. In Montagnais, the notion of *leaf* appears mainly in the free form *nîpîsha*. This free form is a main category in the taxonomy (Fig. 4); it is again present in such lexemes as *tshishiteu-nîpîsha*, "leaves that warm up," a class of specifically medicinal plants, or in other lexemes such as *pâshpâstshu-nîpîsha* (twin-flower), which is used for chest illness. Taxonomically, these *leaves* are found mostly among the *mashkushua* (herbaceous plants), but there are a few cases reported in ligneous plants. In ten cases, the plants used as medication are so small that no parts can be differentiated as to usefulness. These plants are found all over the taxonomy. In five other cases, one *atishî* (small shrub) and four *mashkushua* (herbaceous plants), it is the root (*ushkâtiâpî*) that is used as medication. For my female informants, *roots* form a category per se (Fig. 5). The notion also appears mainly in a free form in such lexemes as *uâpush-ushkâtiâpîa*, wild sarsaparilla. Finally, there are some other parts of plants that serve a medical purpose, but much less frequently. These parts still show a relation either with nomenclature or taxonomy: for example, four kinds of cones (*uâshkuetuî*, which is again the name of a category; see Fig. 7); four kinds of gum (*pitshu* includes all the different sorts of gum); two kind of berries, *mînakashiâshkua* (from *mîn-*, "berry") being the name of a general category containing all *fruit plants*; and two kinds of wood.

In Montagnais there are very few words for medications; it is mostly the names of the plants that act as the names of the medications. Therefore, compared with the technical uses of plants, where one can find in the names of the objects constructed a relation with the parton *wood* and the category *mishtuk*^u (tree), the relation operates a little differently in the medical domain. Here it is in the actual lexemes of the plants, used instead of names for the medications, that one can find a link with partonomy and taxonomy. There are many examples to illustrate this kind of relation, which has to do with the "doctrine of signatures." A

few can be found in Clement 1990. I will cite only three here. In Montagnais the same morpheme, *uîshatsh-* (*uîshak-*) is used in a description of throat illness (*nuîshatshiku ukûtâkan*) and in three of the plants used to treat the illness (*uîshatshiminânakashî*, *uîshakâshkamuk^u*, and *uîshatshipukua*). The treatment of fever shows similar relations: three of the plants used can be classified as *tshishiteu-nîpîsha*, "leaves that warm up," and the symptoms of fever are qualified in Montagnais as *tshishinauâshu*, a word derived from *tshishin*, "it is cold," describing a state exactly opposite to the one implied in the names of the plants used. Finally, among the plants used to treat skin diseases, seven out of ten refer explicitly or implicitly to the color red (for example, *mîkuâpemuk^u*, red-osier dogwood, from *mîku-*, "red;" *atûshpî*, speckled alder, whose bark yields a red liquid when boiled), which can be used to define most symptoms of these diseases.

Considering only the number of taxa, use of plants as food comes in third position after their medical (41 taxa) and technical (34 taxa) uses. Only 25 species were traditionally—and in some cases still are—consumed by the Montagnais, of which 19 are *mînakashîâshkua*, fruit plants. The others were mostly plants eaten in case of famine (for example, all kinds of reindeer moss). The word *mînakashîâshkua* contains three morphemes, two of which establish a relation between a parton (*mîn-*, "berry") and taxonomy (*-âshku* refers to wood and hence to a category of ligneous plants). Furthermore, the third morpheme, *-akashî-*, "fruit plant," associates the latter two notions (*plant* conveys here the notion of woody), and with the first morpheme (*mîn-*) is found in *all* the lexemes denoting a fruit plant (for example, *mashkuminânakashî*, *atûminânakashî*, and *uîshatshiminânakashî*). These plants, as noted before, are mostly classified as *atishîa* (small shrubs). This category contains no less than 15 kinds of *mînakashîâshkua* (Fig. 3).⁹

Structure of relations.—To summarize Montagnais botanical knowledge, the fundamental structure of the relations between these people and their plants comprises two main aspects that can explain the taxonomy. These aspects are plant morphology (partons) and utilization. I will detail how this structure operates below, then demonstrate its manifestations in taxonomy. In fact, it is as if taxonomy was but an effect on the language level of a deeper core constituted by a complex utilitarian relation between a people and a domain of its environment.

The Montagnais classify plants in two major categories on the basis of the presence or absence of a single part, the "root": plants that possess this organ "grow in the earth" (*ashtshît nte kânîtâutshîht* or *kânîtâutshîki*) and plants that do not have any "roots" are considered "earth" (*ashtshî*) itself¹⁰. The first of these two large categories is further divided in two on the basis of the presence or absence of an internal part, the "wood": *mishtukuat* (trees), *shakâua* (shrubs), and *atishîa* (small shrubs) are all ligneous, while *mashkushua* (herbaceous plants) by definition are not. The technical uses of plants by the Montagnais are related to the formation or existence of the two main categories: "wood" and its uses for technical purposes are present in most of the divisions of the first major category, and technical uses were also reported as the main uses of the plants comprised in the second main category. Why then are there some categories that define themselves in a positive way and others in a negative way? This state of

affairs is not peculiar to the Montagnais. The origin of some of the categories in our own botanical system shows the same development:

Study of de Jussieu's classification illuminates a peculiar problem which must have intrigued many students of Angiosperm classification. There are, broadly, two kinds of families, which one might call the 'definable' and the 'indefinable', well illustrated by the *Umbelliferae* and the *Rosaceae*, both 'old' families in the sense that the concept roughly representing the modern family is visible in eighteenth-century works. A remark by de Jussieu in his introduction to the *Rosaceae* is worth quoting: 'Tournefort gave the name *Rosaceae* to all those plants with regular polypetalous flowers which were not *Umbelliferae* nor *Cruciferae*, nor resembled Lilies nor Dianthi in their flowers'. In other words, a certain length of the chain of linked genera is conveniently dealt with, leaving as a mid-point link the type genus *Rosa*.

Why is the rose chosen? The answer is clear. This was happening in seventeenth-century Europe, where for centuries previously art and literature had been full of certain symbolic flowers. How could any other choice have been made? The 'indefinable' families, then, are associative; the type genus is an important European plant; and the shape of the family is a product of this thought-process. Furthermore, the more powerful the symbol in medieval writing, the earlier the 'recognition' and the larger the family; thus *Rosaceae* and *Liliaceae* in contrast with (say) *Homalidaceae* and *Amoryllidaceae*. (Walters 1961:77-78)

These remarks by a botanist on the negative reasons presiding over the creation of a family of plants are most interesting for the present demonstration. The development of a very complex Montagnais category, the *mashkushua* (herbaceous plants), could therefore have originated negatively and, in fact, this is how they were defined by my informants—as plants that have no woody tissue. Why then has this category of plants become as important as *mishtukuat*, "trees," for example? Again, Walters (1961:76-77) offers an answer to this question when he talks about the relation between the uses and importance of a category:

Had there been few Umbelliferous plants in Europe, and had they been of no importance for their edible, medicinal or poisonous properties, *Umbella* might well have been a genus, or at most a few genera, of the *Araliaceae*.

Indeed, it is the great number of taxa and, in a way, the medical uses of the plants classified as *mashkushua*, that played a role in the formation of this important category¹¹.

To pursue my reasoning, "wood" as a central notion in the three categories "trees," "shrubs," and "small shrubs" becomes a key feature in only one of these, the *mishtukuat*, "trees". It is in fact among "trees" that the use of wood for technical purposes is the most developed. The notion of "fruit, berry" is at the origin of another class of plants: the *atishîa*, "small shrubs." In reality, it is in this category that most of the *mînakashîâshkua* (fruit plants) are found, which on the one hand form the essential part of food plants for the Montagnais, and on the other contains,

as a lexeme, an explicit reference to the woody nature of these plants (-*âshku*, "wood"). There remains a final category of plants, *shakâua* (shrubs), for which there seems to be no a priori relation between uses and the taxonomic existence of the class. When the analysis is pushed a little further, one notices that the majority of the *shakâua* have in common a bark that is used as medication (eight out of twelve taxa) and in most of these cases, it is the "internal" bark that is used. My informants had also stated that a secondary feature of this class was a double bark. This feature becomes a key one when considered in light of the fundamental structure behind the morphological taxonomy. For nonligneous species, the medical uses of certain parts also seem to govern the formation of the class: nine out of 13 plants are used as medications. These 13 plants are the only ones used in this class. Compared with other classes, *mashkushua* (herbaceous plants) comprises a high number of residual plants (i.e., plants that are not used): 17 out of 30 taxa compared with 28 plants not used out of 119 in the whole taxonomy. The essence of the *mashkushua* could therefore be a residual class, which would account for its complexity and its structure not being as clear as the other classes.

Once the main classes were formed in the development of this botanical taxonomy, one could have found common elements in one class (for example, height of plants, size of stem) that would seem to have been factors in the incorporation of other plants that appear now as residuals compared with the prototypes defined by the use of a special part. This would explain the general appearance of the taxonomy. Again, this state of affairs is not peculiar to the Montagnais. The existence and development of classes in the Linnean taxonomy follow the same pattern. Walters (1961:81) talks about the reasons behind the development of particular classes of plants:

Under what conditions, then, can a large genus 'arise'? Broadly, I think there are two kinds of situation, which might be exemplified by the very large genera *Carex* and *Euphorbia*. *Carex*, the largest European genus according to Nyman (1878) with 163 species, has by recent estimates well over 1000 species in the world. In the *Species Plantarum* the total of known species of *Carex* was twenty-nine! *Carex*, in fact, represents relative taxonomic ignorance at the time of Linnaeus. This fact becomes more evident when we contrast the generic size and number of the *Gramineae* with that of the *Cyperaceae*. In each case the inconspicuous wind-pollinated flowers present similar difficulties of interpretation; yet the economic importance of the grasses in Europe had ensured that by the time of Linnaeus forty-six genera were named and described, as against five of the present-day *Cyperaceae*.

To understand this citation, one should know that *Carex* are part of the family *Cyperaceae*, and as they were not used during the time of Linnaeus, they were practically ignored in the taxonomy; the opposite is true for the *Gramineae*: because of their economic importance, the *Gramineae* were much more developed.

Montagnais taxonomy revised.—Table 2 illustrates the relations between partonomy, uses, and taxonomic importance. In each main category of the taxonomy, there are certain uses of plants that are more quantitatively developed than others. The

TABLE 2.—Paratomy, uses and taxonomy.

Partons	Uses	Number of Taxa	Categories
- <i>âshk</i> ^u (wood)	technical	8 <i>mishtukuat</i> 1 <i>shakâu/mishtuk</i> ^u	MISHTUK ^u (useful wood)
<i>uânâtheshk</i> ^u (bark)	medical	5 <i>mishtukuat</i> 1 <i>mishtuk</i> ^u / <i>shakâu</i> ; 1 <i>shakâu/mishtuk</i> ^u 6 <i>shakâua</i>	SHAKÂU (double bark)
<i>mîn</i> (fruit)	food	1 <i>shakâu/mishtuk</i> ^u 2 <i>shakâua</i> 1 <i>shakâu/atishî</i> 8 <i>atishîa</i> 1 <i>atishî/nîpîsh</i> 1 <i>atishî/mashkushu</i> 1 <i>atishî/mînakashîâshk</i> ^u 1 <i>mashkushu</i> 1 <i>nîpîsh</i> /unaffiliated	ATISHÎ (fruit plant)
<i>nîpîsh</i> (leaf)	medical	1 <i>nîpîsh/atishî</i> 1 <i>atishî</i> ; 1 <i>nîpîsh</i> 3 <i>nîpîsha/mashkushua</i> 1 <i>nîpîsh/atishî/mashkushu</i>	NÎPÎSHA (medical leaves)
<i>ushkâtiâpî</i> (root)	medical	1 <i>atishî</i> 1 <i>atishî/ushkâtiâpî</i> 1 <i>nîpîsh/uâpukun/mashkushu</i> 1 <i>nîpîsh/mashkushu</i> 1 <i>nîpîsh/atishî</i> 1 <i>uâpukun/mashkushu</i>	
<i>uâpukun</i> (flower)	not used	5 <i>uâpukuna/mashkushua</i> 1 <i>uâpukun/nîpîsh/mashkushu</i>	UÂPUKUNA (flowers)
<i>tshishtâpâkuan</i> (branch of conifer)	medical	7 <i>mishtukuat/tshishtâpâkuanat</i> 1 <i>tshishtâpâkuan</i>	TSHISHTÂPÂKUANAT (medicinal branches)
<i>ûtîkuan</i> (branch of deciduous)	medical	1 <i>atishî</i>	---
- <i>shkamuk</i> ^u (ground, surface)	technical	6 <i>ashtshî</i>	ASHTSHÎ (earth)
<i>pashkuâtshîtuk</i> ^u (rotton wood)	technical	3 <i>ashtshî</i>	
<i>uâshkuetuî</i> (cone, mushroom)	medical	4 <i>mishtukuat</i>	UÂSHKUETUÎA (medical cones)
<i>pitshu</i> (gum)	medical	4 <i>mishtukuat</i>	PITSHU (medical gum)

relation between the number of taxa used for a particular purpose and the category to which these taxa belong is constant in every main category. It corresponds also to what was found as being the structure of the Montagnais's relations with their plants. In each category, there is therefore a core constituted of what one could call prototypes. The reality of these cores is further attested by the fact that taxonomic anomalies¹² can be explained by their presence. For example, there were two taxa, *mashkuminânakashî*, showy mountain ash, and *uâpineu-mîtshima*, willow, about which my informants were hesitant: the first one was classified most of the time as a *mishtuk^u* (tree) and sometimes as a *shakâu* (shrub); the second sometimes as a tree, but more often as a shrub. These two cases are very interesting and can help us to understand in what ways taxonomy is utilitarian and in what ways it is not. This explanation follows.

The core of the class *shakâua* (shrubs) is constituted of six taxa named, classified as *shakâu*, and known for their medicinal internal bark by one or both groups of informants. These plants are the following: *atûshpî*, speckled alder; *atûminânakashî*, Bartram's shadbush; *tshîtshue shakâu*, green alder; *apueminânakashî*, pin cherry; *mîkuâpemuk^u*, red-osier dogwood; and *kâmatshakâshit shakâu*, wild holly. Two anomalies, *mashkuminânakashî*, showy mountain ash, and *uâpineu-mîtshima*, willow, could also be considered part of the core since their bark is used as medication, but they will be dealt with later in more detail. The other four plants (see Fig. 2) left in the *shakâua* have the following uses: *mûshuminânakashî*, edible cranberry-tree, and *innîtshîminânakashî*, fetid currant, are fruit plants that are eaten; *atîkupemuk^u*, glandular birch, is not used; and *mishtukusha*, red-berried elder, has a stem which is used to prepare a medication for headaches. All four of these species have multiple stems, a feature that defines the class morphologically. Hence, the general process operates like this: medicinal double bark defines the prototypes of the class *shakâua*¹³ (shrubs). The majority of the prototypes also have the common feature of multiple stems; this secondary feature, as opposed to secondary features that will emerge in the formation of other classes, helps to classify the residual plants that do not conform to the prototypes but still possess this secondary feature. The last four plants mentioned would constitute such residual plants in the taxonomy.

The two anomalies still have to be explained. *Mashkuminânakashî*, showy mountain ash, possesses a medicinal bark and therefore is considered sometimes as a *shakâu*. However, *mashkuminânakashî* is the only plant among the *shakâua* to also possess wood that is used for a technical purpose: *ushtâshkuâshk^u* (axe handle), which is composed of the morpheme *-âshk^u*, "wood." This taxon can therefore be considered also as a *mishtuk^u* (tree) since the prototypes of this category have in common wood, which is used for technical purposes. Furthermore, *mashkuminânakashî* is the *only* lexeme among the *mishtukuat* (trees) to be marked by the inanimate gender, a fact that argues in favor of its classification as a *shakâu* rather than a *mishtuk^u*, all the *shakâua* being inanimate and the *mishtukuat* animate. Similar reasons explain the taxonomic ambiguity of *uâpineu-mîtshima*, willow. Willow is used only as medication and has no technical purpose. The main medical use is made of its bark as medication; the plant is therefore classified more often as a *shakâu* than is *mashkuminânakashî*, showy mountain ash, which also has *wood* used for a technical purpose. *Uâpineumîtshima* is also

inanimate, which leaves no doubt as to its taxonomic category. However, the same plant is sometimes classified as a *mishtuk^u*, "tree." This time, the apparent features (height of trees compared with shrubs, one stem instead of multiple stems) affect the taxonomic choice of the informants. They hesitate and sometimes considered the plant as a *mishtuk^u* (tree).

Other cases of anomalies could be cited to support this interpretation. For example, three plants (*shâshâkuminânakashî*, *utaiminânakashî*, and *mashtshekuminânakashî*) were systematically considered *atishîa* (small shrubs) by women and *mashkushua* (herbaceous plants) by men. All these plants are fruit plants, and in Montagnais society, it is the role of the women to pick berries (there is even a proverb saying that if a man picks berries, he will only have girls as progeny). The plants are therefore classified by women as *atishîa*, whose fundamental feature is edible berries. On the other hand, in Montagnais society men are the ones responsible for the transformation of wood into objects. Consequently they have considered these three plants as unusable and have classified them according to their most apparent features. The first two are nonligneous plants and the third grows very near to the ground, hence their classification as *mashkushua* (herbaceous plants), which comprise herbs, small plants, and many residuals.

The relation between paronomy and taxonomy just presented in Montagnais botanical thought can also be found in other world views. Feit (1978:105) has reported the existence of the same relation among the Cree of Waswanipi in the province of Quebec. The Cree are of the same linguistic family as the Montagnais:

The diversity and types of upper level classifications that have been discovered indicate that there often are cross-links to other classificatory structures—including technological utilization, dietary status, economic and ritual significance [. . .]. For example, the term for 'tree', an ethnobotanical category, may serve as well as a resource category, as 'timber' or 'firewood' [. . .].

When one also learns that the English word *wood* is related to the old Irish word *fid*, which means tree, and that the English word *tree* is related to the Sanskrit *dâru*, which means wood, the conclusion is evident: in ethnoscientific terms establishing a clear link between taxonomy and paronomy, a taxon can be a *kind of* simply because its wood is a *part of*¹⁴. The following section expands this generalization to Montagnais zoological taxonomy, rendering the conclusions attained even more convincing.

MONTAGNAIS ZOOLOGICAL TAXONOMY

Relation between taxonomy and utilization: a hypothesis.—Study of Montagnais zoological taxonomy was initiated by Bouchard (1973) and Bouchard and Mailhot (1973). Six main categories were elicited: *aueshîshat*, *missipat*, *pineshîshat*, *manitûshat*, and *shâtshimeuat*. The translation of these terms by Bouchard and Mailhot, as well as some translations found in dictionaries from the seventeenth century to today, are recorded in Table 3. In spite of the fact that some of these translations are not accurate (for example, the category *namesh* includes aquatic animals other than fish, such as sea mammals, lobster, shrimp, crab, and all

TABLE 3.—Main Montagnais zoological categories.

	<i>aueshîsh</i>	<i>namesh</i>	<i>missip</i>	<i>pineshîsh</i>	<i>manitûsh</i>	<i>shâtshimeu</i>
Fabvre (1970) [1695]	animal, terrestrial beast	fish	kind of bird, big duck	small bird	small bugs, worms (<i>manit8- chich</i>) ¹	mosquito, gnat, midge (<i>sakime8</i>) ¹
Laure (1988) [1726]	animal in general, beast	fish	duck, wild fowl (<i>irini- chichip</i>)	bird	insect, worm (<i>mani- tuchich</i>)	mosquito, gnat, midge
Bouchard and Mailhot (1973)	animal, four-legged animal	fish	water- fowl	bird	animal with maleficent power	insect
Mailhot and Lescop (1977)	animal, four-legged animal	fish	moyak (eider)	bird	maleficent animal (<i>manitûshîss:</i> insect, bug)	insect
McNulty and Basile (1981)	wild or do- mestic animal	fish	feathered water- fowl	small bird	insect, rep- tile, malefi- cent animal	mosquito, biting insect

¹The symbol 8 signifies the ancient recording of the /u/ sound.

shellfish), these translations of Montagnais zoological categories can suggest which apparent features define them: mainly morphological (four-legged, feathered, small, big); habitat (land, water); and miscellaneous (wild, tame, biting, maleficent power). During my own fieldwork on the identification, nomenclature, and classification of 567 taxa, Montagnais informants gave many reasons why an animal was classified in one or another of these main categories. These features, whether mentioned for only one or many taxa, appear in Table 4. The table shows a number of paradigms that operate in the apparent choices informants make when assigning a particular category to a taxon. These paradigms include those used by certain authors as compiled in Table 3, but also largely exceed them. Taxonomic classification seems therefore to be a very complex operation, and any attempt to grasp it in simple terms is unlikely to succeed.

However, there are indications that simple keys exist for interpreting this complex and detailed system. These indications come from the analysis just presented on the relation between taxonomy and partonomy in Montagnais botanical knowledge. They also originate in Feit's (1978:214) observation of the relation his own Cree informants established between the ordering of their animals and their use as food:

Among the explanations given there were a number that referred to what the 'animals' being rated themselves ate. It will be remembered that what

and where an 'animal' eats were the predominant criteria for the grouping made in the picture sortings, and that a secondary criterion, quality of the 'animal' as food for humans, suggested a link between the ordering of the domain 'animals' and the domain 'food'.

A relation between food and biological classification has also been found in Navaho, as Feit (1978:105) reports from a study by Perchonock and Werner: "Perchonock and Werner, using a card-sorting method of elicitation, found with Navaho that taxonomies of food terms intersect extensively with folk biological classifications." This quotation follows Feit's statement about the relation between *tree* and *wood* that I referred to earlier. If uses and taxonomy are related, one can expect to discover these relations everywhere and not in a single domain. The Montagnais zoological system shows such a relation. Among the features given by my informants to explain why a taxon was classified in a given category (Table 4), there is one that corresponds to the one revealed by Feit and Perchonock and Werner. This feature is based on the utilization of animals, and revolves around the central theme of edibility and inedibility. There are also two partons involved, *uiâsh* (meat) and *namesh* (flesh), which are used to differentiate types of meat, from *aueshîsh* or *namesh*. My presentation of Montagnais zoological taxonomy will follow this lead, and I will attempt to explain certain anomalies in this taxonomy (for example, *amishk^u*, beaver, is classified as *aueshîsh* but also sometimes as *namesh*, with fish). The explanation of these anomalies can further validate my interpretation of the relation between the taxonomy, the partonomy, and the uses of the biological entities.

General zoological taxonomy and structure of relations.—According to my own data, there is no single term in Montagnais that would be equivalent to what is considered in scientific terms the animal kingdom. Bouchard and Mailhot (1973) suggest that the term *aueshîsh*, in the general sense of "animal", covers the entire zoological domain, including reptiles, amphibians, and invertebrates. In the words of one of my informants, this is an impossibility: "*Eruk^u* (spider and ant), *kuâkuâpishîsh* (butterfly), *sheuekâtshu* (dragonfly, damselfly), *umâtshashkûk* (frog), and *shâtshimeu* (diptera) are not *aueshîsh*. *Aueshîsh* is *namesh*, *missip*, *pineshîsh*, *maikan* (wolf), all that" (Jérôme Napish, Mingan, 13.12.1988). Furthermore, another informant explains why all these animals cannot be classified together in one labelled category¹⁵: "We can't name all that: the insects, the shells, and the rabbit together. We must rather name the groups separately: *eshat* (shellfish), *manitûshat*, *pineuat* (partridges), . . . Because, when we say *aueshîshat*, we think immediately of those animals that are edible" (Abraham Mestokosho, Mingan, 01.12.1988). These statements seem to imply the existence of two domains in Montagnais zoological taxonomy: edible animals and inedible animals, corresponding respectively to *aueshîshat* and *manitûshat*. In a critique of Bouchard and Mailhot's study, Brunel (1975) pointed out that the taxa belonging to the category *manitûshat* should be considered as unaffiliated taxa and not as a main category, since the feature defining these taxa was not morphological but associated with maleficent power, which is not a taxonomic criterion. While Brunel is surely right in his criticism regarding taxonomic criteria, my data strongly supports the fact that the taxa

TABLE 4.—Features of Montagnais zoological categories.

	<i>AUESHÎSH</i>	<i>NAMESH</i>	<i>MISSIP</i>	<i>PINE-SHÎSH</i>	<i>MANI-TÛSH</i>	<i>SHÂT-SHIMEU</i>
ANAT./ MORPH.	fur; internal morphology; size; quadruped		size; feathers; big feathers	size	small; general morphology	wings
HABITAT -general	earth; forest	water; sea; can't get out of the water	water	tree	water; amphibious	
-shelter	burrow			nest		
LOCO-MOTION	walks; doesn't fly		flies		crawls	flies
FOOD HABITS	generalist	fish	fish; shell	generalist	leaf; toad; meat; skin	
RELATIONS BE-TWEEN SPECIES	lives with other <i>aueshîshat</i> ; independent	lives with other <i>nameshat</i>	lives with other <i>missipat</i>	lives with other <i>pine-shîshat</i> ; doesn't live with <i>missipat</i>	lives with other <i>manitûshat</i> ; nocturnal	
MISC. HABITS			social; migrating			
UTILIZATION	<i>uiâsh</i>	<i>namesh</i> ; eaten on Fridays	<i>uiâsh</i>	<i>uiâsh</i> not eaten	inedible	
MISC.					ugly; rare; animal of the devil; bites; stings; can kill; causes pain; etc.	

categorized as *manitûshat* can be accorded the same taxonomic status as the other categories. First, the reasons why my informants classified these taxa as *manitûshat* included, but were not limited to, maleficent power and the like; other reasons were morphological (small, no wings, like a worm), habitat (water, amphibious), and locomotion (crawls), all biological criteria that are pertinent in a taxonomy. Second, 32 out of 38 terminal taxa (Fig. 8) classified as *manitûshat* in my own study are invertebrates, the other 6 being reptiles and amphibians. The category *manitûshat* is therefore relatively homogeneous and can be opposed as a category to all other vertebrates apart from reptiles and amphibians, even on a strictly morphological or biological basis. My informants stated that they had never examined the anatomy of the reptiles and amphibians in their environment, and accordingly no bones were named among the amphibians, and only a name for the jaws was elicited for reptiles. This fact could imply that reptiles and amphibians are associated with invertebrates because, in the minds of my informants, these animals seem to have no bones, whereas all other animals were attributed a skeleton. A simple division between *aueshîshat* and *manitûshat* based on the morphological feature of the presence or absence of vertebrae is therefore the more pertinent in that it is supported by another underlying feature—the edibility or inedibility of the species:

When we say *manitûsh*, it is only to indicate to be careful not to eat it.
(Jérôme Napish, Mingan, 12.12.1988)

or, in religious terms:

Those are all the animals of the Devil. Our Lord, he has created all the animals of the forest. The Devil, he was jealous and he started making his own animals. He made *anîk* (American toad), which is not a beauty, *umâtshashkûk* (mink frog), also not beautiful, and *shâshâku-anukutshâsh* (eastern chipmunk). That one, he looks like the fur animals, but he is not good to eat. What God made is all good. But the Devil, he has always tried to play tricks. We can't eat that, the serpents and the toads.
(Abraham Mestokosho, Mingan, 30.11.1988)

The case of *shâshâku-anukutshâsh*, eastern chipmunk, illustrates how the taxonomy operates. *Shâshâku-anukutshâsh* constitutes a taxonomic anomaly since the taxon was classified as *aueshîsh* and *manitûsh*. The main reason given for its classification as an *aueshîsh* was the fur of the animal, a secondary or apparent feature of this class. On the other hand, the reasons given for classification of the same taxon as a *manitûsh* were that the animal's fur was striped, it was rare in the region, it lived with reptiles, it had nocturnal habits or a certain general appearance, and finally, as noted in the citation above, because it was not good to eat. The last reason fits perfectly with the proposed interpretation, and since it fundamentally defines the *manitûshat*, it could well be the main reason for its categorization as such. The same explanation can also support the fact that other animals are classified as *manitûshat* and in another category. This is the case with *mûkamishu*, American bittern, which is not eaten and which is classified with the other waterfowl (*missipat*), besides being a *manitûsh*; and with *nânâshpâtinishtsheshu*, star-nosed mole, which is not eaten and is said to be an *aueshîsh* as well as a *manitûsh*¹⁶.

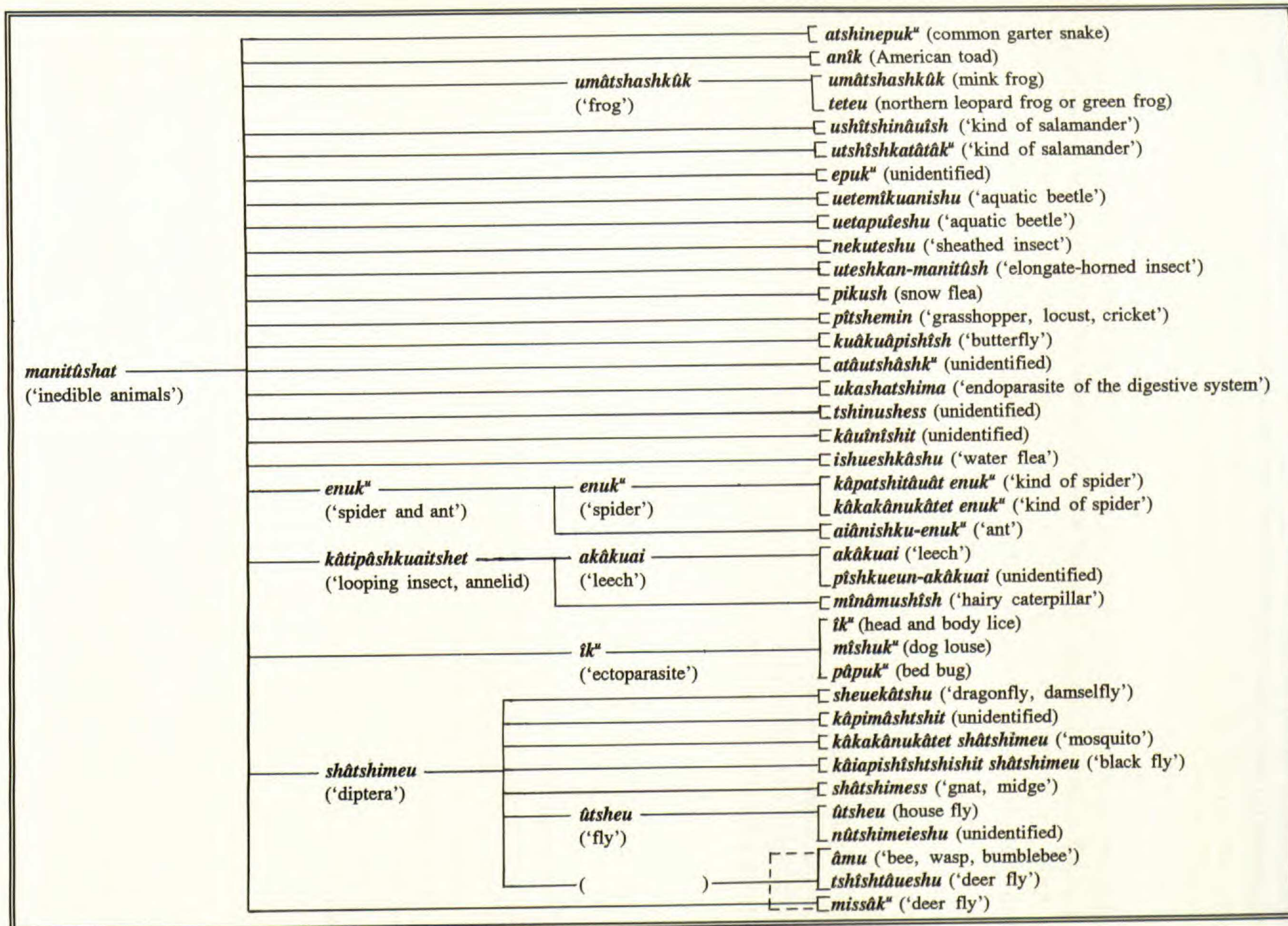


FIG. 8.—*Manitûshat* (inedible animals or invertebrates, reptiles and amphibians).

Once a division is made between edible and inedible animals, called, respectively, *aueshîshat* and *manitûshat*, another division can be seen between *aueshîshat* (edible animals) that possess *uiâsh* (meat) and those that have *namesh* (flesh). That this division exists can be proven in many ways. First, Bouchard and Mailhot (1973:63) report the same division between *uiâsh* and *namesh*, "the latter being used to designate, it seems, the flesh of the animals that, from the Montagnais point of view, the Church permits everybody to eat on Fridays." Second, during my own fieldwork, I asked two of my informants to distinguish systematically those animals that had *uiâsh* from those that had *namesh*. Of course, no *manitûsh* was said to possess either *uiâsh* or *namesh*. Only mammals and birds were said to possess *uiâsh*, while *namesh* was attributed to all fish, shellfish, lobster, crab, shrimp, and the like. On the other hand, the category *aueshîshat*, discussed above, includes all mammals and birds known to the Montagnais, except the cetaceans. The *nameshat* (Fig. 9), as a taxonomic category, comprises all fish, cetaceans, shellfish, lobster, crab, shrimp, and the like. *Namesh* has therefore two meanings: it can refer to the "flesh" of a certain category of animal as opposed to the "meat" (*uiâsh*) of another category, and it is also used to label the category itself (aquatic animals). Generally speaking, the Montagnais also consider *namesh* (flesh) to be a characteristic of the *nameshat*, and *uiâsh* (meat) to be one of the *aueshîshat*. There is only one exception to this rule: the cetaceans. While these aquatic animals are classified as *nameshat* (aquatic animals), they are the only ones in this category to be said to possess *uiâsh* (meat) instead of *namesh* (flesh). This case is anomalous in terms of the criterion of flesh, but it can be explained. Cetaceans have never been very important in Montagnais culture; the anthropologist Speck (1977:78) even believed that the absence of cetaceans in Montagnais legends could indicate that the Montagnais had arrived only recently on the shore of the Gulf of St. Lawrence and the Atlantic Ocean. Cetaceans could therefore have been incorporated in the taxonomy only recently, and it is their most apparent features, their aquatic habits and fish-like form, that would have motivated their classification as *nameshat* (aquatic animals), on the basis that all the taxa in this category show such secondary features. Had cetaceans been eaten, most likely their *uiâsh* (meat) would have served to classify them as *aueshîshat* as well, or as *aueshîshat* only.

There are other taxonomic cases even more anomalous. The *aueshîshat* proper (Fig. 10) comprises all the quadrupeds known to the Montagnais, but a few of them that show semi-aquatic habits are sometimes also classified as *nameshat* (aquatic animals). One informant made the following statement about these animals, which is quite similar to the religious reason given by Bouchard and Mailhot for the Montagnais differentiation between *uiâsh* and *namesh*:

To know if it is *namesh*, one would say formerly that the *nameshat* were those that could be eaten on Fridays. We were hence allowed to eat beaver: beaver is *uiâsh* but it resembles *namesh*, like crab and shrimps. We ate also seal, otter . . . but muskrat, I don't know. Finally, we ate all the other kinds of *namesh* like shellfish, cod, etc. (Abraham Mestokosho, Mingan, 30.11.1988)

While there seems to be a religious idea behind this division, there is some reason to believe the division is very old and traditional. During my field work I elicited

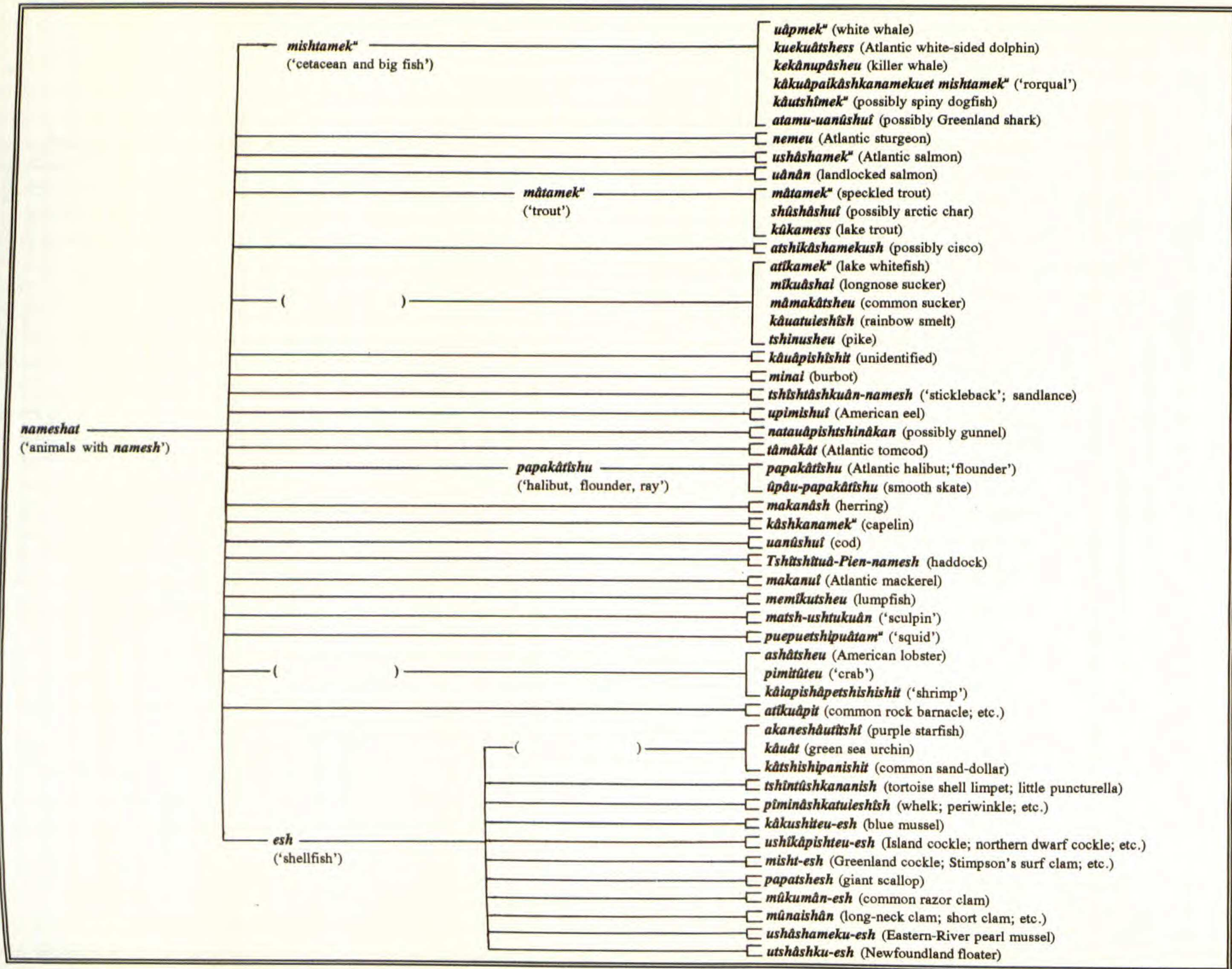


FIG. 9.—Nameshat (animals with *namesh* or aquatic animals).

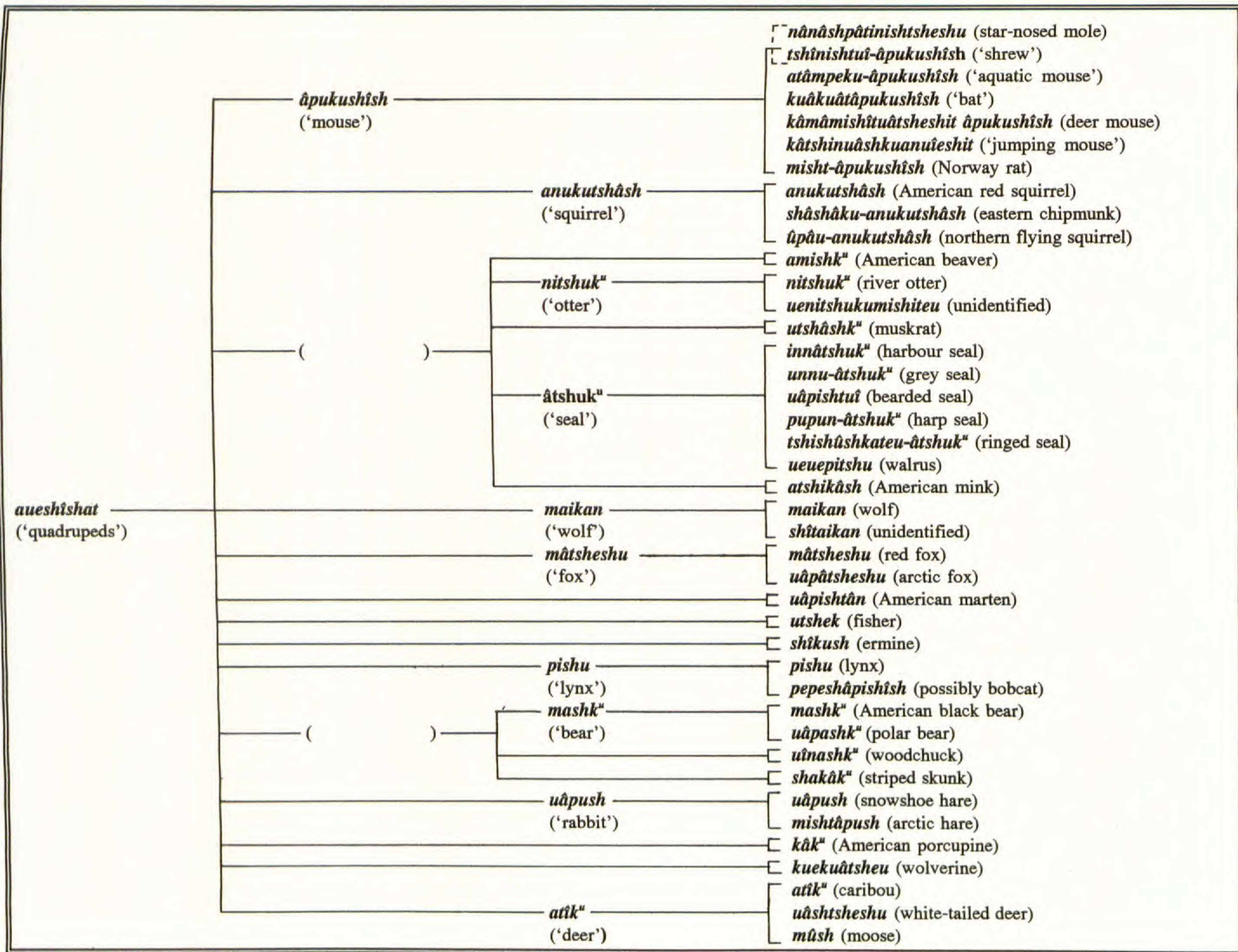


FIG. 10.—*Aueshîshat*, 'quadrupeds'.

the division while studying anatomy, independently of taxonomy. There also exists in the traditional Montagnais religious system another division that parallels the one between *uiâsh* and *namesh*. The Montagnais believed—and many still do—in masters who govern from the spirit world the destiny of the species under their leadership. In this system, there is a general master, *Papakashtshîshk^u*, who is said to control land animals in general, and another one, *Mishtinâk^u*, who has jurisdiction over aquatic animals. This distinction is thus quite similar to that made between *aueshîshat* (quadrupeds and birds) and *nameshat* (aquatic animals), since the first master controls only species that possess *uiâsh* (meat) and the second mostly species that have *namesh* (flesh). The only exceptions are again cetaceans and semi-aquatic mammals (beaver, seal, and the like); the former are always, and the latter sometimes, classified as *nameshat* (aquatic animals). Since the anomalous cases (cetaceans and semi-aquatic animals) are found both in the taxonomic and the religious systems, one suspects this is a very old state of affairs. Another reason given below will definitely prove the antiquity of the system.

After the differentiation between animals with *uiâsh* and animals with *namesh*, there exists a final minor division in the taxonomy based on edibility: between those animals with *uiâsh* that are not consumed, *pineshîshat* (small birds); and those that are, *aweshîshat* proper (quadrupeds), *missipat* (waterfowl), *pineuat*, (partridges), and an unlabelled category comprising all the birds of prey. On this taxonomic level, I have not found any other differences made between the categories on the basis of type of food or use as a food. It seems here that, as one advances lower and lower in the taxonomy, its operation is based more and more on intellectual criteria rather than mainly on utilization. The morphological or behavioral characters become the main features of classification (for example, quadrupeds, birds of prey, waterfowl). A similar pattern emerged in the analysis of the Montagnais botanical system, in which residuals appeared more often in the lowest level of the taxonomy.

Fig. 11 summarizes the main features and categories of the zoological taxonomy of the Montagnais. I will not discuss the *missipat* (waterfowl), birds of prey, *pineuat* (partridges), and *pineshîshat* (small birds) any further; all the taxa comprised in these categories are presented in Clément (1995). Similarly, other lower categories appearing in the different zoological figures (i.e., *enuk^u*, "spider and ant," *mishtamek^u*, "cetacean and big fish," *âpukushîsh* "mouse,") will not be examined in more detail since the purpose here is to present an overview of the way the major inclusive categories operate. On the other hand, the category *shâtshimeu*, referred to at the beginning of this section, appears in Fig. 8. One of my informants classified it as a subdivision of the *manitûshat* (invertebrates, reptiles, and amphibians), but another treated it as an unaffiliated category. Either way it does not interfere with the general demonstration.

The Cree case: further corroboration.—My fieldwork among the Cree of Chisasibi in 1990 yielded a zoological taxonomic structure quite similar to the one just presented for the Montagnais. The Cree are part of the same linguistic family as the Montagnais, and it is not surprising to find similar systems. While one might say that my study could have been biased by the earlier findings on the Montagnais taxonomy, there is at least one excellent argument against this: my study among the Cree has

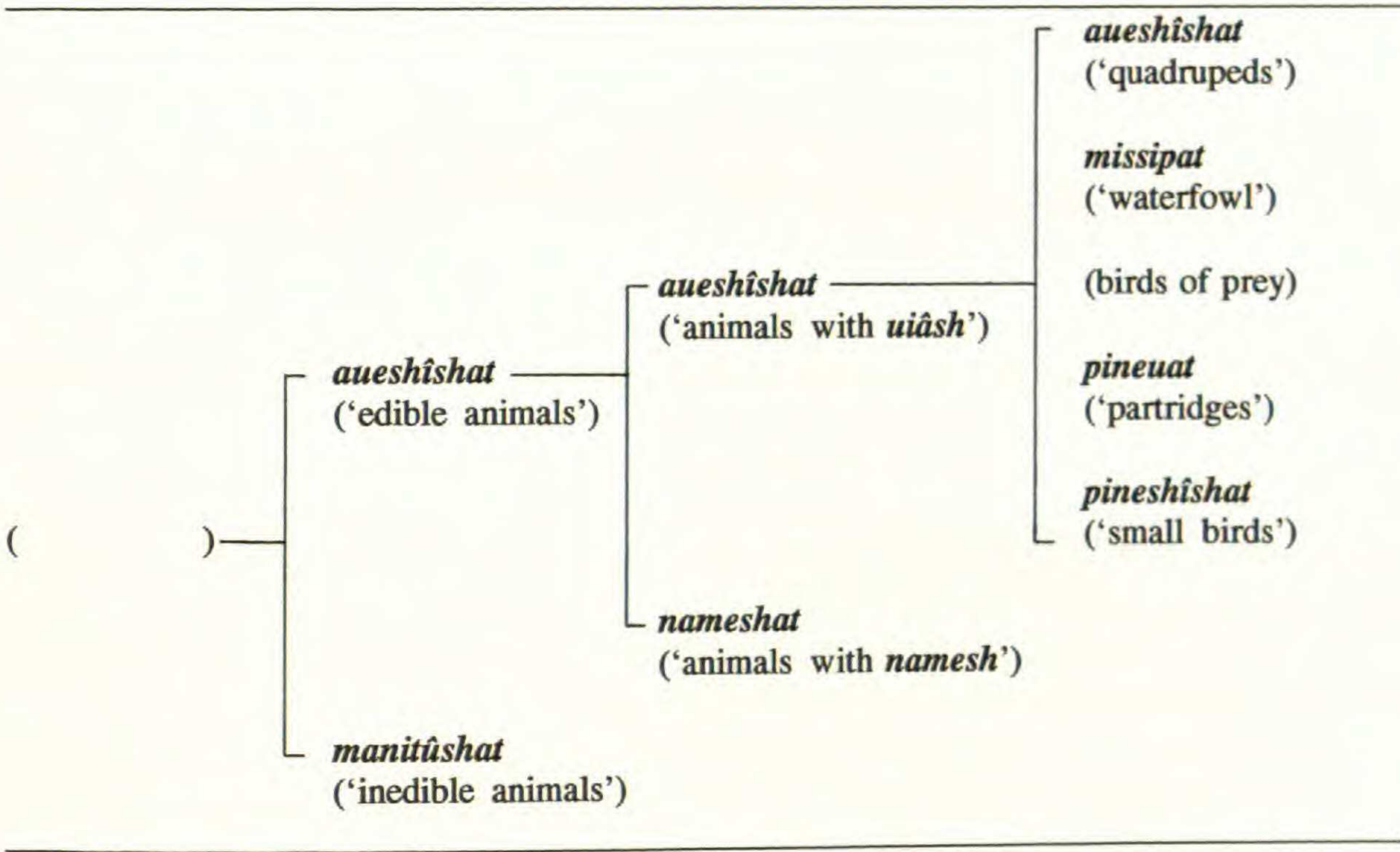


FIG. 11.—Schema of Montagnais zoological taxonomy.

permitted me to discover an unexpected corroboration of my hypothesis, which might not have been revealed without adopting the premise of the existence of a taxonomic structure based on utilization as food. I present this corroboration below.

The Chisasibi Cree schematic zoological taxonomy presented in Fig. 12 is even more basic than the Montagnais one (Fig. 11). It could include other categories—for example, Feit (1978:180–181) points out that the Cree from Waswanipi, distinguish between large birds and small birds—but exhaustiveness is not my purpose. My study was limited, and here I simply wish to highlight how the zoological taxonomy operates. Thus, the Cree—at least those of Chisasibi with whom I worked—do not have a single term to designate animals as a whole, or fauna as opposed to flora. Feit (1978:180–181) has also observed this: only the most educated Cree among his informants used *awesiisuch*¹⁷ at this level.

As in Montagnais zoological taxonomy, a distinction is made between *uuhkaanch* (edible animals) and *minichuushuch* (inedible animals). The distinction became evident when I asked, for example, why such and such fish was not considered as a *minichuuch*. My informants invariably told me: “Because we eat it.” For my informants, *minichuushuch* comprised most invertebrates, amphibians, and reptiles, that is, all animals “that we don’t eat.” On the other hand, *uuhkaanch* was used specifically for fur-bearing animals as well as, at least for one informant, all animals that were not *minichuushuch*. The edible animals¹⁸ were further divided into two major categories: *uuhkaanch* and *nimaasich*. The category *nimaasich* was equivalent to the Montagnais *nameshat*: it included all aquatic species whether whales, fish, or shellfish, except for marine mammals with “fur,” such as seals, and semi-aquatic animals like the beaver or muskrat. One feature associated with these categories was the use of a specific term to designate the *flesh* of the aquatic animals, a feature absent in the Montagnais system, where one finds a case of homonymy: *namesh* is at the same time a parton

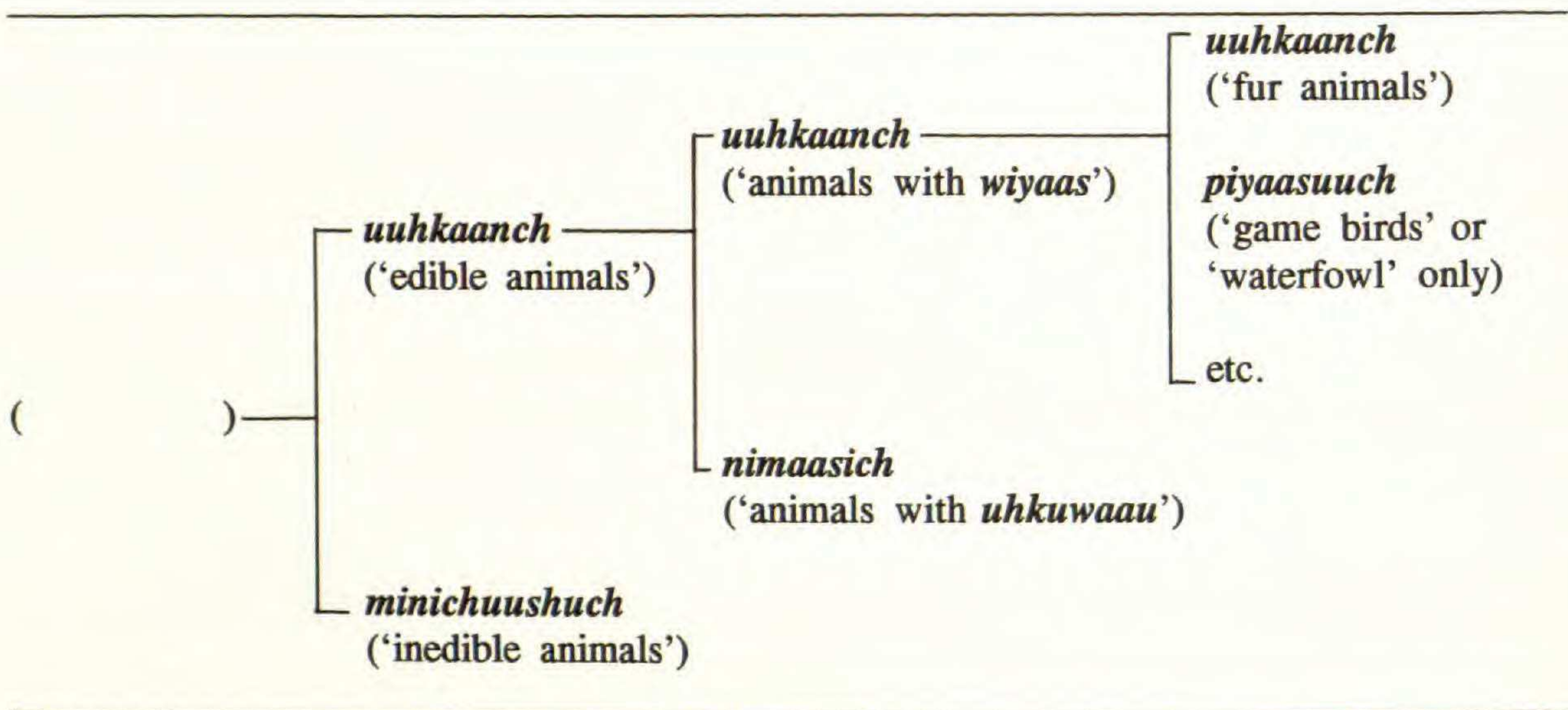


FIG. 12.—Schema of Cree zoological taxonomy.

(flesh) and a name of a category (aquatic animals). This most unexpected term (*uhkuwaau*) was but a confirmation of my hypothesis. Fishing is at present much more important in Cree communities than it is among the Montagnais. In such conditions, the Cree seem to have retained a word to distinguish the flesh (*uhkuwaau*) of fish from the meat (always *wiyaas*) of mammals and birds. The word has apparently disappeared from the Montagnais language, but the system has persisted through time.

CONCLUSION

While the limited scope of this paper did not permit me to examine the Montagnais zoological system thoroughly (the relations between prototypes and residuals were not discussed in detail as they were with the botanical data), both zoological and botanical systems show the same pattern. A clear relation exists between taxa, utilization, and partons. Furthermore, there are operating principles governing the same relation. In the formation of main categories in any taxonomy, the union of prototypical taxa leads to a definition of the principal feature of the category. This definition is based on the use of a part of the taxa: in the botanical system, it corresponds mainly to the technical use of *wood*, the medical use of *internal bark*, and the use of *berries* as food, which lead respectively to the creation of *mishtukuat*, *shakâua*, and *atishîa*. In the zoological system, it corresponds to the edibility of animals, and more specifically, to the presence of either *meat* or *flesh* of animals and aquatic species, which accounts for the formation of the categories *aueshîshat* and *nameshat*. Simultaneously, counterparts of these definitions appear in the taxonomy, leading also to the formation of main categories that, functionally, are designed to assemble the residual elements in the environment: in the botanical system, the *mashkushua*, and in the zoological system, the *manitûshat*.

Once formed around prototypical taxa, each category appears to have certain striking common elements. In turn, these elements by themselves or interacting with the fundamental features help to incorporate other leftovers and to account for the diversity present in nature. This last activity can help us to understand

taxonomic anomalies. In the botanical system, *mishtukuat*, *shakâua*, *atishîa*, and *mashkushua* correspond visibly to *trees*, *shrubs*, *small shrubs*, and *herbaceous plants*. Interaction between the first two categories, for example, can account for the fact that two plants, *mashkuminânakashî*, showy mountain ash, and *uâpineu-mîshîma*, willow, are classified in both of them. In the zoological system, similar examples are found: on one level, the relationship between *aueshîshat* and *manitûshat*, which correspond to *edible* and *inedible animals* on the one hand and to *quadrupeds* and *invertebrates, reptiles, and amphibians* on the other, explains why a taxon such as *shâshâku-anukutshâsh*, eastern chipmunk, is classified both as *quadruped* (or even *animal with uiâsh*) and *inedible animal*. On another level, the relationship between *aueshîshat* and *nameshat*, which refer to *quadrupeds* and *aquatic animals* as well as to *animals with uiâsh (meat)* and *animals with namesh (flesh)*, helps to explain why *amishku*, beaver, is classified in both categories: it has *uiâsh* but also aquatic habits, besides being eaten as a *namesh*.

The discovery of these detailed relationships between taxa, utilization, and partons is important for ethnobiological studies. Moreover, their existence is supported by similar discoveries in Linnean taxonomy. In the ongoing debate between supporters of the cognitive explanation of taxonomy (Berlin 1992) and some of their critics (Hunn 1982; Randall 1976, 1987; Randall and Hunn 1984), who favor an approach that tries to integrate both cognitive and utilitarian factors in the analysis of taxonomy, the approach sustained in this paper can be best evaluated through its method. It is only through minute analysis of uses of plant and animal products alongside study of the classification of the same plants and animals in a taxonomic system which is *apparently* morphological or behavioral that one can discover the relation between cognitive and utilitarian factors. By minute analysis, I mean not only reporting or assessing uses but above all studying these uses in their context, such as the material used or the linguistic manifestation of the uses in the nomenclature of the products themselves. Among other places, it is there, hidden in that nomenclature, that one can expect to find the morphemes that will indicate how the relation between use and cognition operates through the useful parts of the plants and animals classified. What some call higher inclusive categories and others life-forms will then prove to be linked to uses of products, and the study of taxonomy will extend to include other domains of interaction between human beings and their environment.

NOTES

¹At the time of this study, Randall's methods (e.g., Randall 1987:143) to determine focal taxa (which can be considered prototypical taxa) were unknown to me. However, I believe Randall's methods (list of "kinds of" highly inclusive categories asked of a sample of informants and list of good examples and reasons for the choices) would yield results similar to those reached in this paper by other means, mainly through analysis of multiple data. In this sense, my conclusion and that of Randall (and Randall and Hunn 1984) on the majority of higher categories are convergent in certain respects (e.g., importance of utilitarian factors).

²In Algonquian languages, there are two gender classes, which linguists have labelled animate and inanimate. Animate most often includes "all persons, animals, spirits, and

large trees, and some other objects" (Bloomfield 1946:94). The attribution of the animate gender can be an indication of cultural importance, since most objects that are animate are so because in legends or elsewhere they have the capacity of acting as human beings (Vaillancourt 1980:38).

³The complete study—which was used as partial fulfilment for a master's degree in anthropology—has been published (Clément 1990).

⁴This study, which was presented at Laval University as a doctoral dissertation, will also be published (Clément 1995).

⁵This study was part of a project concerned with the economic and social-cultural consequences of exposure of the Cree of Northern Quebec to methyl mercury. My report (Clément 1992) was prepared under contract with Castonguay, Dandenault, and Asso. Inc. for the Cree Board of Health and Social Services of James Bay, the supervisor of the study on behalf of the James Bay Mercury Committee.

⁶For Montagnais, I generally follow the standard orthography as defined by linguists and Native people (Drapeau and Mailhot 1989). Seven vowels are used, four long (*e, â, î, û*) and three short (*a, i, u*). The eight consonants are *m, n, p, t, k, h, tsh* and *sh*. *M* and *k* can be labialized when they terminate a word; this is noted with a superscripted *u*, as in *atîk^u*.

⁷During fieldwork, I worked with women and men separately, always two by two. This approach was designed to study sexual differences in knowledge about plants. In the original study, taxonomic classification made by the two women appeared separately from taxonomic classification made by the two men. In this article, because of spatial limitation and specific objectives, taxonomies of both men and women appear together in the figures.

⁸The botanical definitions of tree, shrub, and herbaceous plants used in this paper are those on which the best known flora for this region (Marie-Victorin 1964) is based. A tree is a woody plant consisting of a single trunk bare at its base and having branches and leaves. A shrub is a ligneous plant with several stems at its base. Herbaceous plants are characterized by absence of woody tissue (i.e., having soft stems) or even absence of stems.

⁹The Montagnais system of classification comprises several types of classification that intersect with the taxonomy, which in appearance is based on morphological criteria (presence or absence of wood, height, size of diameter of stem, and so on). *Mînakashîashk^u*, fruit plant, is an example; fruit plant names with the suffix *-minânakashî* (*-min(ân)-*: berry, fruit + *-akashî*: fruit plant) occur in most of the taxonomical categories. But there are others that are not discussed in this paper, such as *tshîshiteu-nîpîsha* (leaves that warm up), which includes other plants than the one noted in Fig. 4; classification of trees according to the hardness of their wood, and so on (see Clément 1990:43–44). In this article I am concentrating only on the explanation of the relation between higher inclusive taxonomical categories and the use of the parts of the entities classified in these categories.

¹⁰This division also corresponds roughly to the scientific division of plants into vascular plants and lower vascular plants.

¹¹Other authors have tried to explain the development of Linnean taxonomy. Foucault (1970:125–165), for instance, treats the question historically. He relates the development to the importance of language and the apparent premise of that period that life does not exist, only living beings exist that can be named and organized. Atran (1990), who also analyses

this taxonomy historically, denies that classification is tied to practices or utilitarian factors in both Linnean and ethnobiological systems (Atran 1990:20 and 276, note 4; also 1986:152, note 3). In the original French version of his book, Atran (1986:152, note 3) disputes Walters' (1961) view, although in the English version (Atran 1990) this challenge has been withdrawn. To my knowledge, Walters (1961) remains one of the few botanists who has demonstrated an evident relation between Linnean taxonomy and utilitarian factors.

¹²Several attempts have been made to explain anomalies in different systems of classification (e.g., Douglas 1957, 1966; Sperber 1975). Most of them conclude that anomalies are due to the presence of mixed schemes used to classify natural entities. I propose here a more utilitarian explanation based on the presence in all higher inclusive categories of a core of useful prototypes.

¹³Note that one taxon of this class, green alder, is labelled *tshîshue shakâu*, which means literally the "real *shakâu*." The fact that a prototype of this category bears the same name as the category itself also supports the present interpretation.

¹⁴Witkowski et al. (1981:8) explain in greater detail the relation between *tree* and *wood* in English. Their article on the origin of both terms in 66 different languages also supports the present interpretation: these authors believe that *wood* was encoded before *tree* in the world's languages, that "'wood' in the extended sense of 'tree' constituted the principal way in which most languages first encoded 'tree'" and that the antiquity of the concept 'wood' is related to its use as "a raw material."

¹⁵The reality of a covert category equivalent to the animal kingdom is, however, easy to demonstrate. All the lexemes denoting the taxa of this domain are animate and the zoological species have certain elements in common (for example, it is believed that most of them can move by themselves, compared with the botanical species, which cannot).

¹⁶As will appear later on, the classification of these last three animals (eastern chipmunk, American bittern, star-nosed mole) is also based on the presence of an anatomical part. All three have *uiâsh* (meat) and this explains why they are considered on another level (see Fig. 11), *aueshîshat*, which this time refers to "animals with *uiâsh*." But they are also *manitûshat* (inedible animals) because they are not eaten, besides the fact that on a morphological/perceptual level they are not beautiful, look like reptiles, or share the same habitat. This case is similar to that of the willow. Willow has a medicinal bark that constitutes the useful feature of the prototypes of the category *shakâu* (shrubs), but it is sometimes classified also as a *mishtuk*^u (tree) on the basis of secondary (i.e., morphological) features of the latter category (i.e., height, single stem). My interpretation is that plants and animals are classified, first, on the basis of a main usefulness (or the opposite), and second, on the basis of another kind of usefulness or on secondary features (morphological mainly, but also ideological) that have arisen as common to another category whose prototypes are based on another main usefulness.

¹⁷The system used here for transcribing Cree terms is the Roman script as it appears in one of the most recent Cree dictionaries that I am aware of, the *Cree Lexicon* by MacKenzie et al. (1987). Long vowels are distinguished from short vowels (*a, e, i, u, y*) by a repetition of the vowel (*aa, uu, ii*). The consonants used are *j, l, m, n, p, t, k, w, ch, s* and *sh*.

¹⁸The informant who helped me most to establish the taxonomic diagram used the term *uuhkaanch* to designate the edible animals, and specifically fur-bearing animals. For other Cree, *uuhkaanch* signifies domestic animals and *awesiisuch* or *awaasiisuch* is then

used to mean wild animals (Feit 1978:180–181). But this interchangeability of terms does not affect the food basis of the taxonomy.

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APPENDIX 1. Montagnais, English and scientific names of plant species mentioned in this paper (in alphabetical order of Montagnais names)

<i>âmu-nîpîsha</i>	sea rocket	<i>Cakile edentula</i> (Bigel.) Hook.
<i>âmuâpukun</i>	"colored flower"	many species such as: <i>Trifolium repens</i> L.; <i>Iris versicolor</i> L.; <i>Hieracium floribundum</i> Wimm. & Graebn.
<i>anîk-apâkuai</i>	"cortical foliose lichen"	many species such as: <i>Lobaria scrobiculata</i> (Scop.) DC.; <i>Parmelia squarrosa</i> Hale; <i>Hypogymnia physodes</i> (L.) Nyl.
<i>anîk-ashtshî</i>	"long sphagnum"	<i>Sphagnum</i> spp.
<i>anîtshikâta</i>	pitcher-plant	<i>Sarracenia purpurea</i> L.
<i>anukutshâuminânakashî</i>	dwarf red blackberry	<i>Rubus pubescens</i> Raf. var. <i>pubescens</i>
<i>anûshkaniminânakashî</i>	raspberry	<i>Rubus idaeus</i> L.
<i>apueminânakashî</i>	pin cherry	<i>Prunus pennsylvanica</i> L.f.
<i>ashâtshîuâshkamuk^u</i>	"plant growing in the mud"	many species of lichens and mosses such as: <i>Stereocolon saxatile</i> Magn.
<i>ashtâtshîpek^u</i>	"green microscopic algae"	many species
<i>ashtshîminânakashî</i>	black crowberry	<i>Empetrum nigrum</i> L. var. <i>purpureum</i> (Raf.) DC.
<i>ashtshîuâshîshk^u</i>	ground hemlock	<i>Taxus canadensis</i> Marsh.
<i>atâpukuat</i>	yellow clintonia	<i>Clintonia borealis</i> (Ait.) Raf.
<i>atikuminânakashî</i>	bearberry	<i>Arctostaphylos uva-ursi</i> (L.) Spreng.
<i>atîkupemuk^u</i>	glandular birch	<i>Betula glandulosa</i> Mx.
<i>atitshîminânakashî</i>	beach pea	<i>Lathyrus japonicus</i> W.
<i>atûminânakashî</i>	Bartram's shadbush	<i>Amelanchier bartramiana</i> (Tausch) Roemer
<i>atûshpî</i>	speckled alder	<i>Alnus incana</i> (L.) Moench var. <i>incana</i>
<i>îkûta</i>	Labrador tea	<i>Ledum groenlandicum</i> Retz.
<i>innâsht</i>	balsam fir	<i>Abies balsamea</i> (L.) Mill.
<i>innîkuai</i>	"kind of white birch" or "real white birch"	<i>Betula papyrifera</i> Marsh. var. <i>cordifolia</i>

APPENDIX 1. (continued)

<i>inniminânakashî</i>	blueberry	<i>Vaccinium angustifolium</i> Ait.
<i>innîtsîminânakashî</i>	fetid currant	<i>Ribes glandulosum</i> Grauer.
<i>kâianakâshkâti mashkushua</i>	"large herbs"	many species such as: <i>Carex rostrata</i> Stokes; <i>Calamagrostis canadensis</i> (Michx.) Nutt.
<i>kâiapishâshit uâpitsheuâshkamuk</i>	"small and delicate reindeer moss"	<i>Cladonia uncialis</i> (L.) Wigg.
<i>kâiapishâshiti mashkushua</i>	"small herbs"	many species such as: <i>Equisetum arvense</i> L.; <i>Deschampsia cespitosa</i> (L.) Beauv.
<i>kâkakânuâpekâk uâpitsheuâshkamuk</i>	"long and filiform reindeer moss"	<i>Cladina stellaris</i> (Opiz) Brodo
<i>kâkakânuâpekâki mashkushua</i>	"long and filiform herbs"	many species such as: <i>Elymus arenarius</i> L. var. <i>villosus</i> Mey. <i>Myrica gale</i> L.
<i>kâkakânuâshkuâk atishî</i>	sweet gale	<i>Juniperus communis</i> L.
<i>kâkâtshiminânakashî</i>	common juniper	<i>Cetraria nivalis</i> (L.) Ach.
<i>kâkâuâshit uâpitsheuâshkamuk</i>	"kind of lichen"	<i>Ribes lacustre</i> (Pers.) Poir.
<i>kâkuminânakashî</i>	swamp currant	<i>Eriophorum</i> spp.
<i>kâmânitanishipîuâshiti mashkushua</i>	cotton-grass	
<i>kâmatshakâshit shakâu</i>	wild holly	<i>Nemopanthus mucronatus</i> (L.) Trel.
<i>kâmîkuât mashtshekuâshkamuk</i>	"red sphagnum"	<i>Sphagnum</i> spp.
<i>kâmînuâshiti uâpukuna</i>	neodioecious antennaria	<i>Antennaria neodioica</i> Grenne var. <i>neodioica</i>
<i>kâneupemakâht</i>	red clover	<i>Trifolium pratense</i> L.
<i>kânûtamashkuâshiti mashkushua</i>	"small hard rounded herbs"	many species such as: <i>Elymus arenarius</i> L. var. <i>villosus</i> E. Meyer; <i>Carex argyrantha</i> Tuck. var. <i>aenea</i> (Fern.) Boivin
<i>kâpîputepishiti</i>	puffball	<i>Lycoperdon</i> spp.
<i>kâshîkâshkamâkâshit mashtshekuâshkamuk</i>	"small dense sphagnum"	<i>Sphagnum</i> spp.
<i>kâshîpekushkamâkât mashtshekuâshkamuk</i>	"green sphagnum"	<i>Sphagnum</i> spp.
<i>kâshîpekuti mînapâkuna</i>	"green old-man's beard"	<i>Usnea subfloridana</i> Stirt.

APPENDIX 1. (continued)

<i>kâtakûâshiti mashkushua</i>	"small short herbs"	many species such as: <i>Triglochin maritimum</i> L.
<i>kâuâpâshiti uâpukuna</i>	"small white flowers"	many species such as: <i>Equisetum sylvaticum</i> L.; <i>Cerastium arvense</i> L.
<i>kâuâpishtukuâniâshiti tshishiteu-nîpîsha</i>	yarrow	<i>Achillea nigrescens</i> (E. Mey.) Rydb.
<i>kâuâpishtukuâniâshiti uâpukuna</i>	"small white-head flowers"	many species such as: <i>Cerastium arvense</i> L.; <i>Anaphalis</i> <i>margaritacea</i> (L.) Benth. & Hook.
<i>kâuînipâti mînapâkuna</i>	"black old-man's beard"	<i>Bryoria trichodes</i> (Michx.) Brodo & D. Hawskw. ssp. <i>americana</i> (Mot.) Brodo & D. Hawskw.
<i>kâuîpâpinamânapukâshiti nîpîsha</i>	American mint	<i>Mentha arvensis</i> L.
<i>kâuîshâuâshiti uâpukuna</i>	"small yellow flowers"	many species such as: <i>Taraxacum officinale</i> Weber; <i>Leontodon</i> <i>autumnalis</i> L.;
<i>kâuîshâuâshkamâkâshit mashtshekuâshkamuk^u</i>	"yellow sphagnum"	<i>Ranunculus acris</i> L. <i>Sphagnum tenellum</i> (Brid.) Brid.
<i>mâshi-mîtûsh</i>	balsam poplar	<i>Populus balsamifera</i> L.
<i>mashkuminânakashî</i>	showy mountain ash	<i>Sorbus decora</i> (Sarg.) Schneider
<i>mashtshekuminânakashî</i>	small cranberry	<i>Vaccinium oxycoccos</i> L.
<i>mâshtshîshk</i>	eastern white cedar	<i>Thuja occidentalis</i> L.
<i>matshi-nîpîsha</i>	common hemp-nettle	<i>Galeopsis tetrahit</i> L.
<i>matshikîsha</i>	possibly leather leaf	<i>Chamaedaphne</i> <i>calyculata</i> (L.) Moench.
<i>mîkuâpemuk^u</i>	red-osier dogwood	<i>Cornus alba</i> L. var. <i>alba</i>
<i>minaik^u</i>	white spruce	<i>Picea glauca</i> (Moench.) Voss
<i>mishtukusha</i>	red-berried elder	<i>Sambucus pubens</i> Michx.
<i>mîtishat</i>	field sorrel	<i>Rumex acetosella</i> L.
<i>mîtûsh</i>	trembling aspen	<i>Populus tremuloides</i> Michx.
<i>mûshuminânakashî</i>	edible cranberry-tree	<i>Viburnum edule</i> Raf.
<i>nanamishtshîu-ushkâtiâpî</i>	"water arum's rhizome"	rhizome of <i>Calla</i> <i>palustris</i> L.
<i>nipî-uâshkuai</i>	"white birch of the water"	<i>Betula papyrifera</i> var. <i>papyrifera</i>

APPENDIX 1. (continued)

<i>nishtshikâta</i>	bristly sarsaparilla; American great burnet	<i>Aralia hispida</i> Vent. <i>Sanguisorba canadensis</i> L.
<i>nishtshiminânakashî</i>	bog bilberry	<i>Vaccinium uliginosum</i> L.
<i>nishtshimîtshima</i>	"food of the goose"	many species such as: <i>Callitriche hetero-phylla</i> Pursh.; <i>Arenaria peploides</i> L.
<i>nitshukuminânakashî</i>	sour-top blueberry	<i>Vaccinium myrtilloides</i> Michx.
<i>pâshitshinâkuana</i>	club-moss	<i>Lycopodium</i> spp.
<i>pâshpâstshu-nîpîsha</i>	twin-flower	<i>Linnaea borealis</i> L.
<i>pinâsteshkamuk^u</i>	"kind of liverwort"	<i>Ptilium crista-castrensis</i> (Hedw.) De Not.
<i>pineuminânakashî</i>	snowberry	<i>Gaultheria hispidula</i> (L.) Bigel
<i>pitshikîsha</i>	possibly swamp laurel	<i>Kalmia polifolia</i> Wang.
<i>pûshûan</i>	conk of <i>Fomes</i> spp.	
<i>shakuteuminânakashî</i>	cloudberry	<i>Rubus chamaemorus</i> L.
<i>shâpuminânakashî</i>	hairy gooseberry	<i>Ribes hirtellum</i> Michx.
<i>shâshâkuminânakashî</i>	bunch-berry	<i>Cornus canadensis</i> L.
<i>tshîtshue ashtshîuâshîshk^u</i>	"ground hemlock associated with balsam fir" or 'real ground hemlock"	<i>Taxus canadensis</i> Marsh. associated with <i>Abies balsamea</i> (L.) Mill.
<i>tshîtshue atâpukuat</i>	"yellow clintonia propagating by means of layers" or 'real yellow clintonia"	<i>Clintonia borealis</i> (Ait.) Raf. propagating by means of layers
<i>tshîtshue shakâu</i>	green alder or 'real <i>shakâu</i> '	<i>Alnus viri</i> (Chaix) DC. var. <i>sinuata</i> Regel
<i>tshîtshue uîpîtakâshk^u</i>	cow parsnip or 'real hollow stem plant"	<i>Heracleum lanatum</i> (=H. <i>maximum</i> Bart.)
<i>uâkuanâpishk^u</i>	rock tripe	<i>Lasallia papulosa</i> (Ach.) Llano
<i>uâpineu-mîtshima</i>	willow	<i>Salix</i> spp.
<i>uâpush-ushkâtiâpîa</i>	wild sarsaparilla	<i>Aralia nudicaulis</i> L.
<i>uâshkatamuî</i>	"pond-lily's rhizome"	rhizome of <i>Nuphar</i> spp.
<i>uâshkuai</i>	white birch	<i>Betula papyrifera</i> Marsh. var. <i>cordifolia</i> (Regel) Fern.
<i>uâtshinâkan</i>	tamarack	<i>Larix laricina</i> (Du Roi) K. Koch.
<i>uîshakâshkamuk^u</i>	goldthread	<i>Coptis groenlandica</i> (Deder) Fern.
<i>uîshakâtshâkuat</i>	fern	<i>Dryopteris</i> spp.
<i>uîshatshiminânakashî</i>	mountain cranberry	<i>Vaccinium vitis-idaea</i> L.
<i>uîshatshipukua</i>	sheep laurel	<i>Kalmia angustifolia</i> L.

APPENDIX 1. (continued)

<i>ushkâtuk</i> ^u	black spruce	<i>Picea mariana</i> (Mill.) BSP.
<i>ûshpuâkanîssat</i>	"sporophytes of mosses"	sporophytes of mosses such as <i>Polytrichum commune</i> Hedw.
<i>ushtshishk</i>	jack pine	<i>Pinus divaricata</i> (Ait.) Dumont
<i>utaiminânakashî</i>	strawberry	<i>Fragaria virginiana</i> Duchesne
<i>utshâshku-mîtshima</i>	"food of the muskrat"	many species such as: <i>Carex</i> spp.; <i>Eriocaulon</i> <i>septangulare</i> With.; <i>Eriophorum</i> spp.

APPENDIX 2. Montagnais, English and scientific names of animal species mentioned in this paper (in alphabetical order of Montagnais names)

<i>akaneshâutîtsî</i>	purple starfish	<i>Asterias vulgaris</i>
<i>amishk</i> ^u	American beaver	<i>Castor canadensis</i>
<i>anîk</i>	American toad	<i>Bufo americanus</i>
<i>anukutshâsh</i>	American red squirrel	<i>Tamiasciurus hudsonicus</i>
<i>ashâtsheu</i>	American lobster	<i>Homarus americanus</i>
<i>atâmpeku-âpukushîsh</i>	"aquatic mouse"	many species
<i>atamu-uanûshuî</i>	possibly Greenland shark	<i>Somniosus microcephalus</i>
<i>atîkamek</i> ^u	lake whitefish	<i>Coregonus clupeaformis</i>
<i>atîk</i> ^u	caribou	<i>Rangifer tarandus</i>
<i>atîkuâpit</i>	common rock barnacle	<i>Balanus balanoides</i>
	northern coil worm	<i>Spirorbis borealis</i>
	common serpula	<i>Serpula vermicularis</i>
<i>atshikâsh</i>	American mink	<i>Mustela vison</i>
<i>atshikâshamekush</i>	possibly cisco	<i>Coregonus artedii</i>
<i>atshinepuk</i> ^u	common garter snake	<i>Thamnophis sirtalis</i>
<i>îk</i> ^u	head and body lice	<i>Pediculus humanus</i>
<i>innâtshuk</i> ^u	harbour seal	<i>Phoca vitulina</i>
<i>kâk</i> ^u	American porcupine	<i>Erethizon dorsatum</i>
<i>kâkuâpaikâshkanamekuet</i>	"rorqual"	
<i>mishtamek</i> ^u	humpback whale	<i>Megaptera novaeangliae</i>
	minke whale	<i>Balaenoptera acutorostrata</i>
	fin whale	<i>B. physalus</i>
<i>kâkushiteu-esh</i>	blue mussel	<i>Mytilus edulis</i>
<i>kâmâmishîtuâtsheshit</i>	deer mouse	<i>Peromyscus maniculatus</i>
<i>âpukushîsh</i>		
<i>kâshkanamek</i> ^u	capelin	<i>Mallotus villosus</i>
<i>kâtshinuâshkuanuîeshit</i>	meadow jumping mouse	<i>Zapus hudsonius</i>
<i>âpukushîsh</i>	woodland jumping mouse	<i>Napaeozapus insignis</i>
<i>kâtshishipanishit</i>	common sand-dollar	<i>Echinarachnius parma</i>
<i>kâuât</i>	green sea urchin	<i>Strongylocentrotus dröbachiensis</i>
<i>kâuatuieshîsh</i>	rainbow smelt	<i>Osmerus mordax</i>
<i>kâutshîmek</i> ^u	possibly spiny dogfish	<i>Squalus acanthias</i>

APPENDIX 2. (continued)

<i>kekânupâsheu</i>	killer whale	<i>Orcinus orca</i>
<i>kuâkuâtâpukushîsh</i>	"bat"	
	little brown bat	<i>Myotis lucifugus</i>
	Keen's bat	<i>M. keenii</i>
<i>kuekuâtshess</i>	Atlantic white-sided dolphin	<i>Lagenorhynchus acutus</i>
<i>kuekuâtshesu</i>	wolverine	<i>Gulo gulo</i>
<i>kûkamess</i>	lake trout	<i>Salvelinus namaycush</i>
<i>maikan</i>	wolf	<i>Canis lupus</i>
<i>makanâsh</i>	herring	<i>Clupea harengus harengus</i>
<i>makanuî</i>	Atlantic mackerel	<i>Scomber scombrus</i>
<i>mâmakâtsheu</i>	common sucker	<i>Catostomus commersoni</i>
<i>mashk^u</i>	American black bear	<i>Ursus americanus</i>
<i>mâtamek^u</i>	speckled trout	<i>Salvelinus fontinalis</i>
<i>matsh-ushtukuân</i>	"sculpin"	
	staghorn sculpin	<i>Gymnocanthus tricuspis</i>
<i>mâtsheshu</i>	red fox	<i>Vulpes vulpes</i>
<i>memîkutsheu</i>	lumpfish	<i>Cyclopterus lumpus</i>
<i>mîkuâshai</i>	longnose sucker	<i>Catostomus catostomus</i>
<i>minai</i>	burbot	<i>Lota lota</i>
<i>misht-âpukushîsh</i>	Norway rat	<i>Rattus norvegicus</i>
<i>misht-esh</i>	Greenland cockle	<i>Serripes groenlandicus</i>
	Stimpson's surf clam	<i>Spisula polynyma</i>
	etc.	
<i>mishtâpush</i>	arctic hare	<i>Lepus arcticus</i>
<i>mîshuk^u</i>	dog louse	<i>Trichodectes canis</i>
<i>mûkumân-esh</i>	common razor clam	<i>Ensis directus</i>
<i>mûnaishân</i>	long-neck clam	<i>Mya arenaria</i>
	short clam	<i>M. truncata</i>
	etc.	
<i>mûsh</i>	moose	<i>Alces alces</i>
<i>nânâshpâtinishtsheshu</i>	star-nosed mole	<i>Condylura cristata</i>
<i>natauâpishtshinâkan</i>	possibly gunnel	<i>Pholis gunnellus</i>
<i>nemeu</i>	Atlantic sturgeon	<i>Acipenser oxyrhynchus</i>
<i>nitshuk^u</i>	river otter	<i>Lontra canadensis</i>
<i>papakâtîshu</i>	"flounder"	
	Atlantic halibut	<i>Hippoglossus hippoglossus</i>
	smooth flounder	<i>Liopsetta putnami</i>
	winter flounder	<i>Pseudopleuronectes americanus</i>
<i>papatshesh</i>	giant scallop	<i>Placopecten magellanicus</i>
<i>pâpuk^u</i>	bed bug	<i>Cimex lectularius</i>
<i>pepeshâpishîsh</i>	possibly bobcat	<i>Lynx rufus</i>
<i>pikush</i>	snow flea	<i>Achorutes nivicolus</i>
<i>pîminâshkatuieshîsh</i>	smooth periwinkle	<i>Littorina obtusata</i>
	American pelican's foot	<i>Aporrhais occidentalis</i>
	common northern whelk	<i>Buccinum undatum</i>
	etc.	
<i>pimitûteu</i>	"crab"	
	common rock crab	<i>Cancer irroratus</i>
<i>pishu</i>	lynx	<i>Lynx lynx</i>
<i>puepuetshipuâtam^u</i>	"squid"	

APPENDIX 2. (continued)

<i>pupun-âtshuk^u</i>	Atlantic long-finned squid	<i>Loligo paelei</i>
<i>shakâk^u</i>	harp seal	<i>Phoca groenlandica</i>
<i>shâshâku-anukutshâsh</i>	striped skunk	<i>Mephitis mephitis</i>
<i>shîkush</i>	eastern chipmunk	<i>Tamias striatus</i>
	ermine	<i>Mustela erminea</i>
	possibly also least weasel	<i>M. nivalis</i>
<i>shûshâshuî</i>	possibly arctic char	<i>Salvelinus alpinus</i>
<i>tâmâkât</i>	Atlantic tomcod	<i>Microgadus tomcod</i>
<i>teteu</i>	northern leopard frog	<i>Rana pipiens</i>
	or green frog	<i>R. clamitans</i>
<i>tshînishtuî-âpukushîsh</i>	"shrew"	
	masked shrew	<i>Sorex cinereus</i>
	arctic shrew	<i>S. arcticus</i>
	etc.	
<i>tshîntûshkananish</i>	tortoise shell limpet	<i>Acmaea testudinalis</i>
	little puncturella	<i>Puncturella noachina</i>
<i>tshinusheu</i>	pike	<i>Esox lucius</i>
<i>tshîshtâshkuân-namesh</i>	"stickleback"	<i>Gasterosteus aculeatus</i>
	threespine stickleback	<i>Apeltes quadracus</i>
	bloody stickleback	
	etc.	
	also sandlance	<i>Ammodytes americanus</i>
<i>tshishûshkateu-âtshuk^u</i>	ringed seal	<i>Phoca hispida</i>
<i>Tshîtshtîtuâ-Pien-namesh</i>	haddock	<i>Melanogrammus aeglefinus</i>
<i>uânân</i>	landlocked salmon	<i>Salmo salar</i>
<i>uanûshuî</i>	cod	<i>Gadus morhua</i>
<i>uâpashk^u</i>	polar bear	<i>Ursus maritimus</i>
<i>uâpâtsheshu</i>	arctic fox	<i>Alopex lagopus</i>
<i>uâpishtân</i>	American marten	<i>Martes americana</i>
<i>uâpishtuî</i>	bearded seal	<i>Erignathus barbatus</i>
<i>uâpmek^u</i>	white whale	<i>Delphinapterus leucas</i>
<i>uâpush</i>	snowshoe hare	<i>Lepus americanus</i>
<i>uâshtsheshu</i>	white-tailed deer	<i>Odocoileus virginianus</i>
<i>ueuepitshu</i>	walrus	<i>Odobenus rosmarus</i>
<i>uînashk^u</i>	woodchuck	<i>Marmota monax</i>
<i>umâtshashkûk</i>	mink frog	<i>Rana septentrionalis</i>
<i>unnu-âtshuk^u</i>	grey seal	<i>Halichoerus grypus</i>
<i>ûpâu-anukutshâsh</i>	northern flying squirrel	<i>Glaucomys sabrinus</i>
<i>ûpâu-papakâtîshu</i>	smooth skate	<i>Raja senta</i>
<i>upimishuî</i>	American eel	<i>Anguilla rostrata</i>
<i>ushâshamek^u</i>	Atlantic salmon	<i>Salmo salar</i>
<i>ushâshameku-esh</i>	Eastern-River pearl mussel	<i>Margaritifera margaritifera</i>
<i>ushîkâpishteu-esh</i>	Island cockle	<i>Clinocardium ciliatum</i>
	northern dwarf cockle	<i>Cerastoderma pinnulatum</i>
	etc.	
<i>utshâshk^u</i>	muskrat	<i>Ondatra zibethicus</i>
<i>utshâshku-esh</i>	Newfoundland floater	<i>Anodonta cataracta</i>
<i>utshek</i>	fisher	<i>Martes pennanti</i>
<i>ûtsheu</i>	house fly	<i>Musca domestica</i>